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THE DIAGNOSIS OF CANCER OF THE LUNG

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It is generally agreed that the only hope of cure for patients with bronchial cancer lies in complete removal of the malignant growth. This involves either a lobectomy or a pneumonectomy, and if such procedures are to be successful they must be performed early. Because the symptoms and signs of bronchial carcinoma are in no way pathognomonic, the early diagnosis of this disease by purely clinical means is not possible. From this it follows, firstly, that if cancer is diagnosed correctly at the bedside it is already probably too late for successful surgical treatment and, secondly, if cancer is to be diagnosed at a stage when the only real promise of cure is possible, recourse must be had to special investigations. The most that can be achieved from a clinical examination in an early case of bronchial cancer is to arrive at a suspicion of its existence.

But suspicion is the beginning of diagnosis. It is worth while therefore to review some of the clinical features of the disease which would lead one to suspect its existence. The following should be regarded as indicating cancer of the lung until proven beyond doubt to have a different basis:

1. Chronic cough (often attributed to chronic bronchitis).
2. Haemoptysis in a person over 40 years old.
3. A pleural effusion in a person over 40 years old.
4. Pulmonary atelectasis, segmental or lobar.
5. Recurring lobar pneumonia.
6. Failure of a case of lobar pneumonia to resolve.
7. A pulmonary abscess.
8. A flat note on percussing the chest, in the absence of fluid.
9. Deep chest pain.
10. Pyrexia of unknown origin.

So great is the clinical, and even the radiological resemblance between pulmonary tuberculosis and bronchial carcinoma that the one is often confused with the other. In a country where tuberculosis is prevalent a great number of cases of bronchial carcinoma are bound to be diagnosed as pulmonary tuberculosis. This is an understandable, but fatal error. It behoves the practitioner, therefore, to think of lung cancer whenever he diagnoses lung tuberculosis. A great similarity also exists between bronchiectasis and lung cancer, hence bronchiectasis must be considered in the differential diagnosis. It must be remembered also that a fairly high proportion, probably of the order of 10%, of cases of bronchial cancer do not present with pulmonary symptoms in the first place. This is largely because primary lung cancers are very likely to form secondary deposits in remote areas at an early stage.

Thus the primary complaint may be of an enlarged cervical lymphatic gland, or a secondary growth in the skin or in the adrenal glands giving rise to the syndrome of Addison's disease. Bronchial cancer may present as a secondary growth in bone manifested as a pathological fracture, or in the brain manifested as a mental change. In these cases, however, the diagnosis is not so urgent, for surgical treatment is contra-indicated.

CONFIRMATORY DIAGNOSIS

The greatest importance must be attached to the early pulmonary symptoms. Any of the above-listed clinical manifestations must engender a high degree of suspicion of lung cancer. But suspicion is not enough. There are three classical ways of confirming a suspicion of lung cancer:

1. Radiological examination of the chest.
2. Bronchoscopic examination.
3. Cytological examination of the sputum.

Radiological Examination

A chest 'X-ray' is imperative in all cases where suspicion exists. Sometimes the diagnosis will be confirmed; more often it will be substantiated without being confirmed; never can it be refuted. It cannot be too often stressed that what the radiologist sees is shadow not substance, and that often he will not see even shadow in cases where cancer is present.

Bronchoscopic Examination

A skilled bronchoscopist can see directly into the primary, secondary and tertiary bronchi. He thus covers the areas in which the great majority of bronchial cancers arise. Furthermore, by means of an attachment he can remove pieces of epithelium for microscopic examination. It must be remembered, however, that while the great majority of bronchial cancers are within the view of the bronchoscopist, a significant number are beyond his view.

Bronchoscopy is an uncomfortable procedure for the patient. It usually requires a general anaesthetic and for these reasons it should be the last of the special investigations

performed. It is not of course suggested that it should be delayed for any more than a few days.

Cytological Examination of the Sputum

Cytological examination, like radiological examination, is imperative in all cases where suspicion exists. It may be fairly stated that no examination of the lungs is complete until the sputum has been examined microscopically. As this is rather neglected procedure it will be considered in greater detail.

The number of people who confuse sputum with saliva is remarkable. Even a trained nurse when asked for a specimen of sputum from herself, produced saliva. Such specimens are useless. It cannot be too often stressed that what is required is the secretion from deep down in the lungs.

The common habit of clearing the nasopharynx before coughing is to be avoided as it adds useless bulk to the sputum. Sometimes it helps if the word *phlegm* is substituted for the word *sputum* when requesting a specimen because that term is more precisely understood by many people. To give a patient a sputum jar and ask him to spit into it is almost certain to result in an unsatisfactory specimen. Thus considerable patience is required in what might appear to be a simple task.

The sputum, having been collected, is sent immediately to the laboratory. Some delay at this stage is inevitable; a few hours is excusable, and on occasions malignant cells have been found after a delay of more than 24 hours. Such delay, however, is to be avoided. The sooner the specimen reaches the laboratory the better. Doctors practising in the country, who depend upon the postal services for sending specimens, thus find themselves in a quandary. For such, it is suggested that they themselves make the smears, selecting those parts of the sputum which are flecked with blood or any small solid mass which may be seen. The smear should cover the middle third of the slide. While it is still wet it should be placed gently into a container filled with a mixture of equal parts of 95% alcohol and ether. Intimate contact between the slides is prevented by affixing a paper clip to each. Almost immediately after the slides are placed in this mixture the smears will be seen to turn white. This is due to precipitation of the protein. They are allowed to remain in the mixture for 1 hour. During this time the smears will be completely fixed. The slides are then removed, rinsed gently in water, and onto each smear is put a few drops of glycerine. A clean slide is placed on top of this, making a 'sandwich' of the smear and the glycerine between two glass slides. They are then sent to the laboratory together with the relevant clinical details. On arriving at the laboratory the glycerine is removed and the smears are stained according to the technique recommended by Dudgeon. The function of the glycerine is to keep the smears moist during transmission in the post.

What, it might reasonably be asked, is the precise value of cytological examination of the sputum in the diagnosis of bronchial cancer. It is not possible to answer this question. Some definite and even advanced cases give negative results on occasions but, and herein lies the importance of the procedure, some early cases give positive results. Work is at present in progress to establish more precisely the value of the method. In the meantime it seems reasonable to regard the search for malignant cells in the sputum in cases of bronchial cancer in the same way as a search for tubercle bacilli in the sputum in cases of pulmonary tuberculosis.

There is no disease so deadly, so common and at the same time so difficult to diagnose at an early stage as bronchial cancer. Even with the devices of modern medicine its presence often escapes recognition only to be discovered at post-mortem examination. If, however, the special investigations mentioned above are instituted on the basis of a well-founded suspicion, much can be done to avoid a way of death that does not come easily.

ASSOCIATION NEWS CAPE WESTERN BRANCH : VERENIGINGNUUS TAK WES-KAAPLAND

The following items were discussed at a meeting of the Branch Council of the Cape Western Branch held at Cape Town on 25 July 1958:

The President, Dr. G. M. Malan, paid tribute to the memory of the late Dr. F. O. Fehrsen, who would be greatly missed on the Branch Council and committees. After reference to the results of the previous Branch Council elections Dr. Lindsay van der Spuy was elected to fill the vacancy.

South-Eastern Division. A request was granted from the South-Eastern Division for permission to invite a team of Specialists from the Cape Midland Branch to address the Division at Oudtshoorn in the near future.

Jaarlikse Kerkdiens. 'n Antwoord is ontvang van die Scriba van die Groote Kerk, waarin Sondagoggend 9 November voorgestel word as paslik vir hierdie diens. Dié voorstel is aangeneem.

Income Tax Concessions, Postgraduate Study Courses. In reference to recommendations made by the Branch Council to the Parliamentary Committee, the Assistant Secretary (Transvaal) advised that he had discussed their request with the Department of Inland Revenue, who had intimated that the Department was not prepared to consider attendances at international congresses, or the delivering of lectures abroad, as an 'approved study course'. In the light of this the Parliamentary Committee did not consider that further representations should be pressed.

Assistant at Operation. A member asked what should be done where an abdominal operation was necessary in a town with only two doctors and too far from neighbouring towns to obtain a third doctor as an assistant. The member was referred to the S.A. Medical and Dental Council for their ruling.

Radio-telephone Equipment for Cars. Details were submitted of a scheme which would enable doctors to keep in contact with their rooms from their cars. It was suggested that the firm concerned should advertise their equipment in the *S.A. Medical Journal*; and the attention of possibly interested members is now drawn to the matter. To make this an economically feasible proposition a large number of doctors would have to work together.

Medical Directory. The Knox Printing Company asked for the Branch's approval of their Medical Directory. As Federal Council had given its approval, the approval of the Branch was moved and passed.

Leipoldt Memorial Lecture. A suggestion by the Programme Committee that the Branch should sponsor a general lecture for members, their wives and the laity was accepted with general approval. It was recommended to name the lecture as above in memory of Dr. C. Louis Leipoldt.

Lede word herinner dat hulle die Sekretaris van die Mediese Vereniging van Suid-Afrika, Posbus 643, Kaapstad, sowel as die Registrateur van die Suid-Afrikaanse Mediese en Tandheelkundige Raad, Posbus 205, Pretoria, moet verwittig van enige adresverandering.

Versuim hiervan beteken dat die *Tydskrif* nie afgelewer kan word nie. Dit het betrekking op lede wat oorsee gaan sowel as dié wat binne die Unie van adres verander.

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VAN DIE REDAKSIE : EDITORIAL

ELEKTRIESE SKOKBEHANDELING

As mediese behandelingsmetode het skokbehandeling sonder twyfel 'n ongeëwenaarde geskiedenis. Dit het as empiriese metode van behandeling begin met die toediening van chemiese stowwe. Later het die vorm van die behandeling verander deurdat elektrisiteit die plek van chemiese stowwe ingeneem het—'n ontwikkeling wat die gevolg was van die werk van Cerletti en Bini.[1]

Sedert hierdie elektriese modifikasie van skokbehandeling in swang gekom het, het dit met groot snelheid dwaarsdeur die psigiatriese wêreld versprei. Dit het gou duidelik geword dat dit veral die affektiewe toestande is, liewers as die schizofreniese toestande, wat 'n goeie reaksie by hierdie soort behandeling vertoon, alhoewel sekere gemengde schizo-affektiewe toestande ook skynbaar by die behandeling gebaat het.

Vandag word hierdie soort behandeling nog steeds aanvaar as een van die mees dramatiese vorms van behandeling. Dit het, byvoorbeeld, 'n revolusionêre verandering teweeggebring ten opsigte van die hantering en verloop van die groot aantal bedruktheidstoestande wat by mans en vrouens (met 'n sekere onbuigsame persoonlikheidsgesteldheid) tydens die involusietye voorkom. Die besondere soort bedruktheid van die involusietydperk wat gekenmerk word deur volstrek-belemmerende gevoelens van onrustigheid, sondigheid en onwaardigheid—'n toestand wat vroeër in groot mate bygedra het daartoe om hospitale vir geestessiektes te vul—het vandag sy angel verloor. 'n Beperkte aantal elektriese skokbehandelinge lei by ongekompliseerde gevalle nie net tot *spoedige* herstel nie, maar dikwels tot langdurige en soms *permanente* herstel. En by sekere gevalle van akute katatoniese toestande het elektriese skokbehandeling 'n metode geword waarmee die lewe van pasiënte gered en behou kan word.

Ten spyte van dié dramatiese waarde van hierdie metode van behandeling, het die metode *as metode* nog altyd sy empiriese inslag behou en het die *rationale* daarvan nog steeds uitgebly—in weerwil van die groot aantal teorieë wat bestaan oor wat die fisiologiese en sielkundige veranderinge is wat deur dié behandeling bewerkstellig word.

Soos dit dikwels met sulke empiriese metodes van behandeling gaan, hou dit gevare van misbruik in—juis omdat dit nie bekend is *presies wat* die behandeling inhou en vermag nie. Dit is dus hoogs nodig om weereens te beklemtoon dat elektriese skokbehandeling 'n uitstekende metode van behandeling is, maar net vir 'n beperkte aantal, hoofsaaklik psigotiese, toestande. In verligte psigiatriese kringe word dit vandag al meer aanvaar dat skokbehandeling slegs 'n geringe plek het by die behandeling van neurotiese toestande en dat 'n dinamiese verhouding (tussen terapeut en pasiënt), wat gebaseer is op die wedersydse wisselwerking van emosionele inhoude en kragte, hier van veel groter en meer blywende waarde is.

Empiriese uitgangspunte het nie net betrekking op die aard van die metode van behandeling as sodanig nie, maar ook op die manier waarop die behandeling toegedien word. 'n Betreklike nuwe opvatting het byvoorbeeld gedurende die laaste aantal jare op die voorgrond gekom, dat dit naamlik nalatig sou wees om skokbehandeling toe te dien sonder om van sulke chemiese modifikasiemiddels soos spierontspanningsmiddels gebruik te maak. So het Bennett,[2] byvoorbeeld, verklaar dat ongemodifiëerde skokbehandeling ongewens is en Kelleher en Whiteley[3] het verklaar dat skokbehandeling sonder spierontspanningsmiddels nie verdedig kan word nie. Daar was in Engeland onlangs selfs 'n hofsaak (‚Bolam v. Friern Hospital Management Committee—*Times* Law Report', 1957) waarin die klaer aangevoer het dat dit mediese nalatigheid behels om nie spierontspanningsmiddels by skokbehandeling te gebruik nie.

Teenoor hierdie opvattings kan Kalinowsky[4] se mening genoem word dat stuiptrekkings volgens 'n vasgelegde patroon verloop en dat hulle op 'n veilige manier by enige persoon teweeggebring kan word, terwyl kurare gevaarliker is as die komplikasies wat daardeur verhoed sou word. (Die choline-ester-preparate, wat taamlik algemeen gebruik word, is veiliger as kurare, maar hulle het nogtans belangrike potensiële komplikasies.)

'n Oortuigender argument teen die vryelike gebruik van spierontspanningsmiddels kom van Seager.[5] Hy het die resultate van gemodifiëerde en ongemodifiëerde skokbehandeling ondersoek deur retrospektief die hospitaalverslae na te gaan van 'n groot aantal pasiënte wat albei vorms van skokbehandeling ontvang het. Hy het tot die verrassende ontdekking gekom dat die pasiënte wat net skokbehandeling sonder spierontspanningsmiddels ontvang het, *korter in die hospitaal gebly het, minder behandelings ontvang het en die vooruitsig gehad het om langer gesond te bly* as dié pasiënte wat ook spierontspanningsmiddels gekry het!

Uit die voorgaande is dit dus duidelik dat ons ons basiese uitgangspunte ten opsigte van skokbehandeling herhaaldelik in heroorweging moet bly neem—veral omdat dit 'n goeie, maar ook 'n empiriese metode van behandeling is. Ons sou die hele saak miskien soos volg kon opsom:

1. Elektriese skokbehandeling is 'n waardevolle en dramatiese metode van behandeling wat egter empiries van aard is en wat 'n beperkte gebied van toepassing het. Die toestande waarvoor dit die verkieslikste metode van behandeling is, is die affektiewe toestande, waaronder veral die bedruktheidsfases van die manies-depressiewe psigose, die bedruktheidstoestande van die involusietydperke en sekere katatoniese toestande. By die behandeling van neurotiese en psigosomatiese toestande en wanaanpassing in die algemeen het skokbehandeling slegs baie beperkte waarde as metode van behandeling.

2. Modifikasie van elektriese skokbehandeling kan op 3 maniere bewerkstelling word—deur veranderinge van liggaamsposisie by die pasiënt, deur elektriese variasies wat betref aard, sterkte en aanwending van die stroom tesame met die toediening van 'n ligte narkotiese middel, en deur die gebruik van chemiese middels. Dit wil voorkom asof die

eerste twee modifikasiemaniere die verkieslike maniere is en dat spierontspanningsmiddels met groter versigtigheid en omsigtigheid gebruik moet word.

1. Cerletti, U. en Bini, L. (1938): Arch. Gen. Neurol. Psychiat., 91, 266.
2. Bennett, A. E. (1940): J. Amer. Med. Assoc., 114, 322.
3. Kelleher, J. en Whiteley, R. W. (1955): Lancet, 2, 589.
4. Kalinowsky, L. B. (1949): Bull. N.Y. Acad. Med., 25, 541.
5. Seager, C. P. (1958): J. Ment. Sci., 104, 206.

LONG-ACTING PRESENTATION OF ANTIHISTAMINICS

Although rarely dangerous, hay fever and vasomotor rhinitis are often extremely incapacitating, and hay fever may ruin for the sufferer some of the best parts of summer.

Most treatments are unsatisfactory for one reason or another. Temporary relief in a few cases may follow cautery of the 'sensitive areas'—the septal mucosa opposite the middle turbinate and the mucosa on the anterior end of the inferior turbinate. Another method involves zinc ionization of the nasal mucosa. Probably most practised, however, is the method of specific desensitization, where a series of graded injections of diluted allergens is given with the object of gradually stimulating the tissues to produce more and more antibodies until finally contact with the allergen does not provoke the characteristic violent tissue reaction. This protection is most useful where the allergy is due to a single known allergen; but it often lasts for a limited period only.

The implication of histamine in allergic reactions was first suspected by Dale and Laidlaw in 1910, when they noticed the similarity between anaphylactic shock and the effects of the injection of large amounts of histamine. The similarity of the lesions of skin allergies and those produced by intradermal injection of histamine was also noted. Dale suggested the theory that the tissue injury due to intracellular reaction of allergen and antibody caused the release of histamine from an inert bound form in the tissues. Subsequently other investigators showed that histamine was, in fact, released from sensitized organs exposed both *in vitro* and *in vivo* to the offending allergen.

It was soon shown that adrenaline antagonized the physiological actions of histamine, but the discovery of synthetic inhibitory compounds did not follow until 1937, when Bovet and Staub synthesized a group of substituted phenolic ethers, the most active of which was 2-isopropyl-5-methyl-phenoxyethyl-diethylamine. It was, however, highly toxic and accordingly a search was started for less toxic agents. During these investigations it became clear that the presence of a substituted ethylamine group was necessary for activity of this sort. That the structure function requirements are not exacting is shown by the fact that the ethylamine group may be incorporated into a ring structure, for example, a piperidine ring, without loss of activity. The practical result of this observation was that a bewildering number of antihistaminic compounds was introduced.

It is unfortunately true that nearly all of these compounds have very marked sedative properties and this was a considerable drawback to their use. The danger involved in giving preparations which are liable to induce drowsiness is obvious in car drivers and others in charge of machines which are potentially dangerous if the operator relaxes his vigilance. Apart from such occupations as these, drowsiness is an undesirable side-effect although a sedative action may be an advantage for some patients at night.

Usually the doctor tries a number of antihistaminics with each individual patient until the most suitable one is found and the optimum dosage is arrived at for each drug. Most of these drugs are short-acting and leave the patient without protection during the early hours of the morning and immediately after rising, when allergic attacks are particularly likely to occur.

There is a real need then for a long-acting antihistaminic preparation which produces few side-effects. As yet despite intensive research no single compound has been produced that has all these virtues. Although there are effective long-acting antihistaminic drugs available, such as promethazine and chlorcyclizine, both of these have fairly strong sedative effects. Of late, therefore, increasing attention has been paid to methods whereby prolonged pharmacological action may be produced by slow but continuous absorption of the drug after oral administration. For example, the period of activity of drugs has been extended by presenting them in the forms of pellets coated with differing thicknesses of wax so that the drug is released at different intervals ('Spansule' method). A modification of this method has been introduced with the antihistaminic diphenylpyraline,[1] which is administered in a capsule containing several hundred pellets of the drug. Some of the pellets are uncoated and so release their drug immediately after ingestion (giving rapid therapeutic effect), and the remainder of the pellets have wax coatings of different thicknesses which are so arranged that after the absorption of the initial dose further amounts of drug are released at a rate sufficient to replace losses due to excretion and inactivation. The object is to obtain steady levels of drug in the tissues so as to provide a continuous and steady control of symptoms. It is also claimed that the method of releasing the drug at a constant rate avoids the peak concentrations which frequently follow the administration of drugs in tablet form and which cause excessive side-effects. Favourable results with this method have been reported[2] in a series of cases of chronic allergic rhinitis, with very little manifestation of the side-effect of drowsiness.

In another method utilizing the principle of prolonged absorption the drug is compounded with an ion-exchange resin to form a salt from which the drug is only slowly released on being displaced by other ions carrying a suitable charge and which are present in the gut contents. Similarly the drug may be slowly released from other insoluble complexes. Lastly, compound tablets have been used, consisting of a first layer, which breaks down and releases its drug content shortly after ingestion, and a second layer, which is coated with a material that breaks down slowly.

Probably methods such as these of presenting drugs in long-acting form might with advantage be extended to other drugs that are administered by the mouth.

1. Nachtigall, H. B. (1956): J. Allergy, 27, 75.
2. Maxwell, M. J. (1957): Lancet, 2, 828.

DR. J. S. DU TOIT

Met die skielike heengaan van dr. J. S. du Toit het hierdie land in die algemeen, en die Mediese Vereniging van Suid-Afrika in die besonder, 'n gevoelige verlies gely wat nie maklik herstel kan word nie. Ons wil nie hier 'n opsomming gee van alles wat dr. du Toit gedoen en alles waarvoor hy gestaan het nie. Dit sal die leser elders in ons blad vind waar sy ou vriende en kollegas sy lewe en loopbaan in waarderende herinnering roep.

Wat ons egter hier wil doen, is om melding te maak van twee besondere fasette van dr. du Toit se lewe. Albert Schweitzer, die groot humanis en geneesheer van ons tyd, het gesê dat elkeen van ons 'n tweede taak moet hê in die lewe. Hierdeur het hy bedoel dat daar iets in ons lewe moet wees, in die vorm van 'n gemeenskapsdiens, waaraan ons ons met oorgawe en daadkrag toewy sonder dat ons daarvoor betaal word. Dit is veral toewyding aan hierdie tweede taak wat van dr. du Toit 'n groot mens gemaak het. Hy het die gemeenskap op alle moontlike maniere gedien. Ook, waar sy professionele dienste in ere-hoedanigheid nodig was, het hy hulle nie weerhou nie. Ons ken min mense met so 'n onversteurbare integriteit en sulke onbaatsugtige toewyding aan diens aan die samelewing soos wat in die persoon van dr. J. S. du Toit verenig was.

In die tweede plaas wil ons verwys na die betekenis van dr. du Toit se dienste aan die Mediese Vereniging. Hy het nie alleen in al die amptelike rade en liggame van die Vereniging gedien en die ere-penningmeesterskap van die Vereniging meer as 30 jaar lank behartig nie, maar hy het veral gestaan as 'n bindende krag in die Vereniging. Sy één groot ideaal was om te voorkom dat daar wesentlike onenigheid in die Mediese Vereniging self ontstaan. Ons voel daarvan oortuig dat as dr. du Toit aan ons wat agtergebly het, één boodskap sou kon stuur, dit hierdie boodskap sou wees: Moenie toelaat dat die Mediese Vereniging uitmekaar dryf nie. Lewer julle dienste deur eendrag en met toewyding.

Ons hoop dat die lewe wat dr. du Toit gelei het en die spore wat hy getrap het, nie sonder behoudende invloed op die Mediese Vereniging en die samelewing as geheel sal wees nie.

PRIMARY CARCINOMA OF THE LIVER IN INFANCY: WITH A CASE REPORT OF A COLOURED INFANT

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Primary carcinoma of the liver in infants of all races is rare.[5,26,35] In Southern Africa primary carcinoma of the liver is a common tumour among adult Bantus.[4,12,20] In a recent survey in Natal, Wainwright and Roach[31] found that it accounted for 30% of all primary alimentary carcinomas among Bantus, as compared to 2% among Europeans and Indians. In all but exceptional cases among the Bantu, the tumour is associated with cirrhosis, either nodular hyperplasia or diffuse hepatic fibrosis with or without siderosis.

On the other hand, it is most unusual to find cirrhosis in infants and children dying of primary liver carcinoma.[20] Despite the close histological resemblance of liver carcinoma in the infant and the adult, no common aetiological association appears to be present. The condition has been described in a newborn infant, and in the first week of life.[36,37] The occurrence of the tumour at such a very young age suggests that, like the Wilm's tumour of the kidney, it may have its origins *in utero*. Some unusual stimulus to neoplasia or developmental dysplasia seems to be present when liver cells become malignant in infancy.

No case of primary carcinoma of the liver occurring below the age of 1 year has been recorded in Southern Africa. The youngest case observed in the Bantu is a child of 10 years,[19] although a male Bantu child of 7 years is mentioned.[31]

CASE REPORT

A 4-months-old Coloured male infant, J.L., was referred by Dr. O. D. Mollett of Merweville, Cape Province, for investigation of an abdominal mass. He was a full-term infant, but the birth weight was not recorded. He was entirely breast-fed and the 5th child in the family, the other children being alive and well. Six weeks before admission the mother noticed a lump in the abdomen, which had increased appreciably in size. The infant had become somewhat lethargic and had lost weight. No disturbances in bowel function, nor any urinary complaints had been noted. No family history of cancer could be obtained, nor was there exposure on the part of the mother or father to radiation before or during the gestational period.

Examination on 15 August 1957 revealed a contented-looking infant weighing 13 lb. 12 oz. There was evidence of recent weight loss. Temperature was 100°F rectally. The *abdomen* was distorted by a very large, hard, somewhat irregular and nodular mass extending below the costal margins on both sides. On the right side it filled the entire lumbar space and stretched 2 fingerbreadths below the umbilicus across the mid-line to the left renal angle. The mass moved slightly with respirations and it was not obviously tender. No free fluid in the abdomen was detected. The spleen was not palpable and the genitalia were normal. No clinical anaemia, jaundice or dyspnoea was noted, and there were no skin rashes or purpura. The rest of the examination was normal.

The provisional diagnosis was made of a right-sided Wilm's tumour (renal embryoma).

Investigations showed: Hb 9·4 g.% (normal 10·5-12·5 g.%), white cells 19,800 per c.mm., lymphocytes 55%, polymorphs 40%, monocytes 5%; blood Wassermann reaction negative. Serum proteins: albumin 4·9 g.%, globulin 2·0 g.%, total 6·9 g.%.

Serum bilirubin 1·9 mg.% (normal 0·1-0·8 mg.%). Serum cholesterol 245 mg.% (normal 100-200 mg.%). Blood urea 23 mg.%.

Liver function tests: Thymol turbidity 3·5 units, thymol flocculation 1 unit, zinc sulphate turbidity 4 units.

Straight X-ray of the abdomen showed a soft-tissue mass, occupying the whole of the upper abdomen and extending to the brim of the pelvis and displacing the intestines downwards. The gas shadow of the hepatic flexure of the colon was not seen. No areas of intra-abdominal calcification were visible.

X-ray of the chest showed increased lung markings at the right lung base, whilst the right leaf of the diaphragm was raised and indefinite in outline.

Intravenous pyelogram (using 5·5 ml. of 76% urografin) showed good function of both kidneys. The calyceal pattern of the left kidney was normal. The right kidney was displaced downwards

and showed slight distortion of the middle and lower calyces, which filled poorly.

Progress. The infant's condition steadily deteriorated with elevation of the temperature, pulse and respirations and he died on the 4th day after admission.

Autopsy was carried out some 34 hours after death.

The body was that of a fairly well nourished Coloured male infant. On opening the abdomen a cupful of clear straw-coloured fluid was present in the abdominal cavity. No peritoneal nodules were seen. A very large liver tumour was found to occupy the entire right side of the abdominal cavity. The liver mass was adherent to the diaphragm above and to the right kidney, which it had displaced downwards, but it did not appear to be infiltrating these organs. The tumour was uniformly firm and nodular. The liver weighed 855 g. Cut section of the liver showed that the

Fig. 1.

entire right lobe was occupied by a tumour which was well demarcated from normal liver tissue of the left lobe (Fig. 1). The tumour appeared to arise from one focus. It was fleshy in colour with scattered areas of haemorrhage but no obvious necrosis. Running through it were strands having the appearance of dense fibrous tissue, which gave it an over-all lobulated appearance. The hepatic and portal vessels were free from thrombus formation.

The heart, kidneys, brain, spleen, lungs, adrenals and testicles appeared normal.

Histology. Liver (Figs. 2 and 3). Dr. T. Mulligan reported: 'The tumour mass is formed by large polyhedral cells, resembling normal parenchymal cells. There is a tendency in certain parts of these cells to form lobules with sinusoids and a central vein. There are also areas of necrosis and haemorrhage. A few fibrous septa are present and appear to contain structures resembling bile ducts. The surrounding liver tissue shows atrophy and fibrosis. The left lobe appears normal with no evidence of fibrosis. The appearances are that of a well differentiated liver-cell carcinoma (malignant hepatoma).

The *spleen* is congested and shows prominent reactive follicles. The *lungs* show congestive changes and oedema with a few inflamatory cells. No histological evidence of metastases is present in these organs, nor in the heart, kidneys, adrenals or brain.'

ASPECTS OF THE DISEASE

Pathology

Primary carcinoma of the liver may be derived from the cells of either the liver parenchyma or the bile ducts, that is, malignant hepatoma and malignant cholangioma. In some instances, a mixture of these two may be found in different

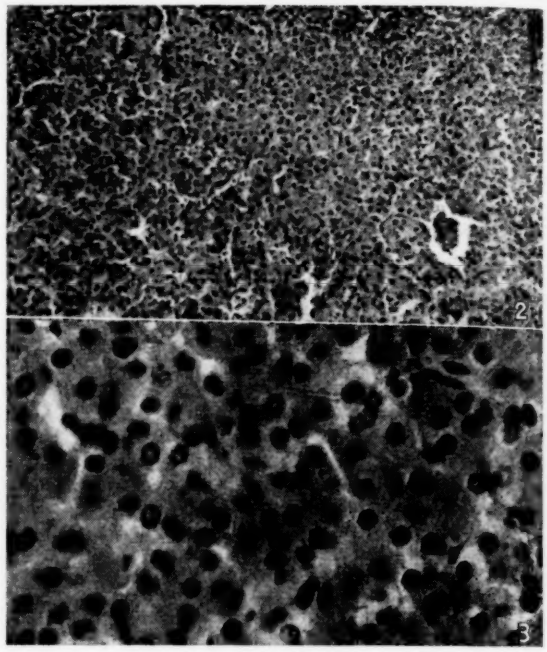

Fig. 2 Low power.
Fig. 3. High power.

parts of the same tumour, in which case the cholangiocellular variety usually predominates over the hepatocellular.

The subject of primary carcinoma of the liver in infancy and children has recently been reviewed by Bigelow and Wright.[5] The authors discuss some of the difficulties in deciding which cases in the literature were true malignant diseases of the liver, in order to exclude benign tumours such as adenomas and hamartomas, and malignant growths such as haemangio-endotheliomas. In all they collected 95 acceptable cases, including one of their own. By far the commonest type was the liver-cell carcinoma (60), 3 were of the bile-duct type, and the others were reported as mixed. Few were associated with cirrhosis.

The gross types have been described as massive (lobar), nodular or diffuse. When nodular the tumour is believed to represent a widespread intrahepatic dissemination. Extrahepatic metastases are noted in about one-third of the reported cases.

Malignant liver cells tend to resemble normal parenchymal cells, but a considerable range of cytological structure may be found. Some parts of a section may show variations from well to poorly differentiated types. The well differentiated cells are cuboidal and discrete, and have a definite but faint cell membrane, and a faintly granular and abundant cytoplasm. These cells are arranged in cord-like manner and may be found projecting into vascular spaces. Mitotic figures are usually scanty. Cells are frequently found invading normal liver tissue, or extending into hepatic veins or through the liver capsule. There is usually a complete lack of lobular formation of normal liver tissue. Portal or hepatic veins may contain tumour thrombus. Spontaneous non-neoplastic portal-vein thrombosis is an important

complication seen in adults but not in infants. Dense stroma composed of collagen strands are frequently found dividing the tumour when it is unicentric in origin. Areas of haemorrhage and necrosis are commonly seen.

Several malignant liver tumours in childhood appear to be of a mixed embryonal or teratoid origin.[14] They are sometimes referred to as embryomas. The histological pictures of these tumours are extremely varied and include tissues from all parts of the body, commonly osteoid tissue. Depending on what tissue predominates, they are reported in the literature as malignant liver-cell carcinoma, embryonal hepatocellular trabecular carcinoma, or occasionally as 'unclassified carcinoma'. Further features of primary liver carcinoma are described by Wells[35] and Edmondson and Steiner.[11]

Age of Onset. Of the 95 cases reviewed by Bigelow and Wright,[5] 55 appeared under 2 years of age (58%), and in 35 (42%) the first symptoms developed at or before 1 year. Cases have been recorded in the neonatal period.[36,37]

Sex. Of the recorded cases 65 were males and 28 females, a ratio of nearly 2·3 : 1. In 2 cases the sex was not specified. The incidence of primary carcinoma of the liver in adult Bantus in the Union of South Africa is 7 times higher in males than in females,[4] but in the USA the sex incidence in adults is similar to that in infants.[11]

Race. Most reports in the literature fail to mention the race of the infant, but liver carcinoma in infants appears to occur equally in White and non-White races with a uniformly widespread geographical distribution.

Clinical Picture

Primary liver carcinoma in infancy usually runs a rapid course. The first sign is an enlargement of the abdomen and the development of a palpable mass in the upper abdomen. Attacks of pain over this area may occur. Jaundice is uncommon although a slightly raised serum bilirubin level may be found. The mechanical effects of pressure by the tumour on the bile ducts and the portal veins may give rise to an obstructive jaundice, ascites and signs of back pressure on the portal venous system. Anorexia, gaseous distension of the abdomen and loss of weight are common, but in some cases the infant appears well nourished. A swinging type of fever is not infrequent, especially in the closing stages of the illness. Anaemia of sufficient degree to call for a blood transfusion may be present. The average duration of life from the appearance of the first symptoms is about 4 months.

Diagnosis

The presence of a mass of fairly rapidly increasing size in the right upper quadrant of the abdomen presents certain diagnostic difficulties in an infant. If the mass is fairly large the clinical picture resembles a right-sided Wilm's tumour of the kidney, which is the provisional diagnosis commonly made. Yet primary carcinoma of the liver is not altogether an uncommon tumour in infancy and should always be considered in the differential diagnosis of lumps in the upper quadrant. Urine examination and a pyelogram is advisable in all cases. The tumour should not be palpated more than is necessary, since, in the case of a Wilm's tumour, frequent palpation may cause dissemination of malignant cells. Benign neoplasms and cysts of the liver and kidney, retroperitoneal teratoma, and neuroblastoma have to be considered. A pyelogram usually localizes a renal or adrenal tumour. The presence of calcification on the straight film of the abdomen strongly suggests a neuroblastoma, whilst the retroperitoneal teratoma can usually be felt extending deeply across the mid-line of the abdomen.

Enlargement of the liver may be due to a liver abscess as the result of an umbilical infection. Or an amoebic liver abscess may be present in an older infant or child, and amoebae may be found in a fresh stool. In the Union of South Africa parasitic cysts of the liver, usually due to echinococcus, should be considered and the Casoni skin test performed in suspected cases. Leukaemic infiltration of the liver may lead to gross hepatomegaly in young children without symptoms, and the diagnosis is dependent on a full blood examination. By and large, the diagnosis of primary liver carcinoma is one of exclusion with reliance on the history, symptoms and laboratory findings. Unfortunately, the recognition of the tumour is rare and it is usually large by the time it is discovered. Laparotomy is occasionally necessary in order to establish the correct diagnosis, although these infants tolerate laparotomy badly.

Prognosis

The disease is invariably fatal. One-third of the cases have metastases to other organs, notably to the lungs, lymph glands and adrenals.

Treatment

Treatment is palliative in nearly every case. Use of radioisotopes such as anhydrous chromic phosphate may give temporary benefit.[17] Radio-active iodinated human serum albumin, employed to detect secondary carcinomatous deposits in the liver, may have some therapeutic application.[27] The excision of liver tumours, benign or malignant, although fraught with many dangers, particularly the hazard of haemorrhage, is not impossible. Benson and Penberthy[3] removed a hamartoma in a 7-months-old infant, and several operators have removed malignant growths of the liver in adults successfully.[16,21,23] Reported cases of successful surgical removal are few and many appear, surprisingly, in the older literature; one wonders how reliable the reports on the histology were in these earlier cases. If on palpation the tumour appears to be single, and no evidence of secondary spread can be found, then laparotomy should be considered with the object of possible removal of the tumour.

DISCUSSION

Animal experimental work

It is difficult to evaluate the vast volume of experimental work in the production of liver carcinoma in animals, and to attempt to relate it to human liver carcinoma. Any correlation of the experimental work applies almost entirely to carcinoma in the adult and not in the infant.

Experimental carcinoma of the liver can be produced in rats by azo-compound dyes such as o-amino-azotoluene and p-dimethylamine azobenzene (butter yellow).[25] Riboflavin has been found to inhibit the speed with which azo-induced tumours appear, and cystine supplements to the diets containing the dye decreases the tumour incidence. The methionine antagonist, ethionine, when fed to rats, is also able to produce liver carcinoma[10], and other chemicals capable of doing this too are selenium, ethyl urethane, sodium

tannate, carbon tetrachloride, chloroform, thio-urea and alkaloids of senecio.

Cirrhosis

Many workers have shown that in susceptible strains of experimental animals the production of cirrhosis may lead to tumour formation. Evolution from gross fatty infiltration to diffuse hepatic fibrosis can be demonstrated by serial liver biopsies in rats fed on diets low in lipotrophic factors.[15] Rats on choline-deficient diets have been shown to go through the same stages, and finally to carcinoma.[6] It appears that in experimental animals certain dietary deficiencies are initiators of neoplasia.

Primary carcinoma of the liver is frequent in certain parts of the world where cirrhosis is common, and where nutritional deficiencies and parasitic infestation are often seen. The highest incidence is among the Bantu of Southern Africa and among Orientals.[4] It is the exception not to find cirrhosis in the African Bantu with liver carcinoma either in the form of diffuse hepatic fibrosis or nodular hyperplasia. That environmental rather than genetic causes are responsible is supported by the fact that the incidence is not nearly so high among American negroes. Also the incidence in Africa varies, primary liver carcinoma being 6 times commoner in East Coast Bantus than in those of the Union of South Africa.[4] The diets of the Bantu are low in protein and lipotrophic factors in many instances. If rats are fed on Bantu diets, 20% of them have been shown to develop fatty infiltration of the liver and, later, diffuse hepatic fibrosis.[14]

It appears therefore that cirrhosis with its nodular hyperplasia can be regarded as pre-cancerous. An over-all review of many thousands of cases of primary carcinoma of the liver from all parts of the world shows that about 50% of cases of primary liver carcinoma show histological evidence of cirrhosis.[25] That other factors are responsible is demonstrated by the relatively high incidence (7·3%) of carcinoma developing in patients with haemochromatosis.[3]

Virus Hepatitis

Primary liver carcinoma in adults can develop in livers which are the seat of post-infectious (viral) hepatic cirrhosis.[17,32] Infectious hepatitis *per se* is unlikely to be the immediate cause of liver carcinoma because epidemics of hepatitis have occurred in the USA without a corresponding increase in the incidence of liver carcinoma.[29]

Cirrhosis of the liver in infancy and childhood is caused by several agents,[7] and the group with obstructive jaundice, either congenital or due to specific viral hepatitis, gives rise to early and severe cirrhosis.[13] Yet the immediate cause of death is cirrhosis or its complications in these cases, and carcinomatous changes are rarely found supervening on the cirrhosis. However, Roth and Duncan[22] have recently described a White female child with primary liver carcinoma following giant-cell hepatitis acquired in infancy who died at the age of 2 years 9 months. Because of the increasing incidence of viral hepatitis seen in infants these authors suggest that a careful search be made for histological evidence of giant-cell hepatitis in all infants and children dying of liver carcinoma. Generally, the role of viral hepatitis in the causation of carcinoma of the liver in adults and infants is uncertain.

Kwashiorkor and Liver Fibrosis

In Southern Africa dietary shortage of protein is common among Coloured and Bantu infants and older children living in urban areas. At one extreme this may lead to the development of kwashiorkor, where the liver shows various degrees of fatty change. The study of the natural history of kwashiorkor has not borne out the theory of steady progression from a fatty liver to fibrosis,[33] which under the circumstances might conceivably lead to carcinoma of the liver in children. In a 5-year follow-up series Suckling and Cameron[28] found no case of hepatic fibrosis in liver biopsy specimens of 27 Coloured children from the Cape Town area treated for kwashiorkor (with the possible exception of one child). That a serious nutritional disorder, like kwashiorkor, among children seldom produces fibrosis of the liver, is highly significant. The analogy of liver injury in kwashiorkor and the induced fatty liver in rats breaks down at several points. There is a difference in response to treatment with choline and methionine.[34] There is also a difference in the site of the initial lesion. In the rat fatty infiltration and fibrosis begin in the centre of the lobule,[1] whereas in man they begin at the edge.[8] There is no good evidence that in man fatty infiltration is a precursor of cirrhosis.

A high percentage of African children in the territory along the river Gambia in British West Africa show degrees of peri-portal fibrosis, regardless of their nutritional status.[34] Stellate fibrosis is also found in livers of Native children in Uganda.[8,9] It is uncertain whether most of these are recovered fatty-liver cases, or whether they represent damage to the liver by associated disease, e.g. malaria or schistosomiasis. The latter is the more likely explanation. It should be noted, however, that in the areas mentioned kwashiorkor is also commonly seen. It will be an interesting undertaking to follow up these children into adult life with serial liver biopsies and see who will develop primary carcinoma of the liver.[29]

Age of Onset

The time interval for the sequence of cirrhosis or some other damaging agent to the liver developing into carcinoma is important at all ages. van Creveld[30] records the cases of 2 children who, surviving a prolonged time of dietary inadequacy and illness in infancy, were observed for 8-10 years, during which period they developed cirrhosis and finally carcinoma of the liver. The infant under 2 years of age has hardly the time to develop primary carcinoma of the liver when this has supervened on disturbance of the liver cell by damage, repair and regeneration. The only possible exception is the giant-cell hepatitis of infancy which becomes carcinomatous.[22] This form of hepatitis is believed to be caused by the virus of epidemic infectious hepatitis transmitted across the placenta during pregnancy from the blood of the mother who is a carrier.[13] There should be no difficulty in recognizing this condition by clinical, laboratory and histological studies.

In the majority of infants, there is no evidence either clinical or histological to suggest what factor or factors

are responsible for the development of malignant changes in liver cells.

SUMMARY

A case of primary carcinoma of the liver is reported occurring in a 4-months-old Coloured infant.

Primary liver carcinoma in infancy is rare and associated cirrhosis is unusual. The same tumour is very common in adult Bantus of Southern Africa, who have some form of cirrhosis present in most instances.

The pathology, clinical picture, diagnosis and management of liver carcinoma in infancy is described. The importance of early recognition is stressed, because at this stage, surgical removal may be possible despite the great technical difficulties such as haemorrhage.

The production of liver carcinoma in experimental animals by means of azo-compounds and other chemicals is briefly mentioned, as well as the possible role of cirrhosis, viruses and kwashiorkor in the aetiology of liver carcinoma in infants.

No convincing aetiological factors appear to be present in infants and the tumour is believed to represent a developmental dysplasia of liver cells originating *in utero*.

I wish to thank Dr. R. M. L. Kotze, Medical Superintendent of the Karl Bremer Hospital, Bellville, and Dr. W. Opie, Head of the Department of Paediatrics in the Medical Faculty of the University of Stellenbosch, for permission to publish this case. I am grateful to Dr. P. V. Suckling for his helpful criticisms in the preparation of the paper, to Dr. T. Mulligan for the histological reports, and to Mr. Robert Ellis for the photographs.

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A TRANSKEI MISSION HOSPITAL PRACTICE : INCIDENCE OF DISEASE WITH SPECIAL REFERENCE TO TUBERCULOSIS

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When first envisaged, this paper was intended to be a guide to the incidence of disease in the Transkei, but once figures began to be collected, it became obvious that a far more important problem needed emphasizing, viz. that of tuberculosis.

The article represents a statistical evaluation of the incidence of disease in a Transkei mission hospital in a 6-month period from 22 July 1957 to 21 January 1958. The figures given below are taken from the out-patient and in-patient records of the hospital. As the details are taken during 6 months beginning in midwinter and ending in midsummer, it is felt that this will give a reasonably true reflection of the incidence of disease as a whole.

The Hospital

St. Lucy's Hospital is situated in the north-east Transkei in the Cape Province 34 miles from Umtata, the capital of the Transkei, and 10 miles from the nearest village, at an altitude of approximately 3,000 feet. It was built as a 75-bed hospital but extra accommodation has made the daily quota between 160 and 180 patients including a maternity department. It serves an exclusively African or Bantu population belonging to the Xhosa tribe. Many patients come 30 miles and more on foot or on horseback to get to the hospital, the nearest source of medical attention. It has equipment for most eventualities except a ready supply of donor blood. Those surgical cases which demanded specialist attention were taken by our ambulance to Umtata, a journey of just over an hour. The Government laboratory at East London was at our service for any special investigation required. Post-mortems were performed at the hospital whenever possible.

The Patient

The average Xhosa patient in this practice lives with his family in a bare earth hut containing only the basic necessities of life. Groups of these huts are dotted all over the Transkei. Each family has a plot of land for cultivation and grazing rights for cattle, sheep and goats. Mealies are the main crop and cattle are kept more for their quantity than their quality. Most of the cows give a very poor milk supply and this is undoubtedly in large part responsible for the prevalence of malnutrition. Although there are many strong running rivers, lands are watered only by rain.

Ignorance of basic hygiene is rife. The man-dog-man cycle for common intestinal parasites flourishes, as the dog's function in this society is to dispose of human excreta. Mothers and grandmothers cough into the faces of their offspring and spit wherever they may be.

The witch doctor still flourishes and many patients visit them initially. But it is noticeable that unless immediate relief is obtained, the patient often seeks our aid the very

next day. Witch doctors will unhesitatingly come for treatment when ill and it does not seem to reflect any deficiency in their powers of healing to other Africans when our treatment is effective.

There is no lasting faith in any practitioner or hospital. If not improved or impressed by the treatment given, the patient will go elsewhere even if this involves a long journey. It is impossible to be certain whether those attending the hospital are unselected from the general population, but it must be emphasized that the practice can be compared with a typical rural general practice rather than with the average hospital practice where patients are referred by practitioners, thus increasing the incidence of the more serious disorders.

Material and Method

We have tabulated the diseases encountered under headings conducive to simplicity and brevity. Many of the patients seen could be placed in more than one category, but in all cases they are alloted to the diagnosis considered most important. The one exception is the disregarding of malnutrition when other diseases such as gastro-enteritis, pneumonia or tuberculosis were present. Malnutrition is indeed by far the commonest disease of the African in the Transkei, kwashiorkor in infants and pellagra in adults being the outstanding clinical entities. As it is considered too difficult to assess the part played by malnutrition or minor degrees of it, in the causation and subsequent morbidity of more differentiated diseases, the incidence and influence of malnutrition on these conditions has not been investigated.

Patients coming for repeat examinations for the same disease in the 6-month period are not included for their second or subsequent visits. If they returned with a new disease, this has been included. If the original out-patient diagnosis was shown to be incorrect either on a return visit or after admission to hospital, the records have been altered accordingly. Conditions of interest will be discussed and tuberculosis, the main interest of this paper, will be dealt with in detail. Patients attending for tooth extractions, circumcision and uncomplicated antenatal visits are not included in the out-patient series but will be considered separately.

Findings

A total of 2,002 patients were seen during the 6-month period under review. In table I they are classified for age and sex. As a large proportion of the patients had no idea of their age, they are divided into 3 groups as near as possible to their actual ages.

TABLE I. TOTAL OUT-PATIENTS SEEN

Age (years)	*Males*	*Females*	*Total*
0–5	402	384	786
6–29	197	291	488
30 and over	270	458	728
Total	869	1,133	2,002

The preponderance of female patients in the older age groups is due mainly to the fact that many of the men are away from their homes working elsewhere in the Union.

In table II the diseases are listed under well-known headings and subdivisions, in order of frequency of occurrence. It will be seen that 682 (34·1%) of the total out-patients were admitted to hospital for investigation and treatment.

TABLE II. CLASSIFICATION OF DISEASES

Group	*No.*	*Sub-group*	*No.*	*Admitted*
1. Tuberculosis: (new cases)	394	(See Table III)		245
(previously diagnosed)	69			
2. No diagnosis made	309			32
3. Pneumonia	196			101
4. Gastro-enteritis (non-specific)	196			21
5. Upper respiratory infections	167	Asian influenza	95	3
		Bronchitis	43	—
		Non-specific	29	—
6. Traumatic and local infective diseases	144	Assaults and injuries	54	27
		Fractures	34	22
		Abscesses and localized infections	32	21
		Burns	24	20
7. Ear, nose and throat	113	Otitis media	64	7
		Tonsillitis	22	2
		Quinsy	15	6
		Miscellaneous	12	6
8. Malnutrition	107			29
9. Gynaecology	83	Salpingitis	34	12
		Abortions	15	12
		Puerperal sepsis	8	8
		Fibromyoma	6	2
		Miscellaneous	20	9
10. Skin diseases	42			16
11. Cardiology	35	Rheumatic heart disease	17	10
		Hypertension	11	3
		Cardiomegaly of unknown aetiology	3	3
		Miscellaneous	4	3
12. Infectious fevers	26	Chicken-pox	10	—
		Mumps	11	—
		Whooping cough (2)		
		Poliomyelitis (2)		
		Scarlet fever (1)	5	2
13. Eye diseases	17	Conjunctivitis (13)		
		Miscellaneous (4)	17	6
14. Urinary tract infections	11			4
15. Typhoid	11			11
16. Malignant growths	8	Carcinoma of cervix	3	—
		Epithelioma of leg (1)		
		Chorionepethelioma (1)		
		Carcinomata of liver (1)		
		Thyroid (1) and oesophagus (1)	5	4
17. Other conditions	74			35
Total	2,002			682

DISCUSSION

The second largest group consisted of 309 patients (15·4%) in whom no diagnosis was made and who were treated symptomatically. Functional disorders, aches and pains were responsible for many of these. They also included 94 cases of 'suspected tuberculosis', most of which were thus designated because of cough of long duration, where either the X-rays were considered inconclusive or none were taken for one reason or another. Of these 94 cases 32 were admitted without additional information being obtained.

Lobar pneumonia and bronchopneumonia accounted for 9·8% of the out-patients and 14·8% of the in-patients. Many patients contracted pneumonia after an attack of what appeared to be Asian influenza. The pneumonia was not

confined to the winter months; 58 of the cases occurred in the 2 months ended 21 January.

The 196 cases (9·8%) of gastro-enteritis were seen largely in the latter half of the period. The fact that only 21 were admitted is in part indicative of the average mildness of the cases; the state of hydration was usually good. A mild wet summer helped contain the incidence and severity.

'Assaults and injuries' conformed to the usual pattern. An unusual lesion encountered was human bites of lip and nose. These were the results of fighting amongst females. The commonest fracture was of radius and ulna and the next most frequent was fracture of the skull. Of the latter 6 out of a total of 8 required craniotomy to relieve intracranial pressure. Amongst localized infections were 2 septic circumcision wounds. The Xhosa male is circumcised at a ceremonial according to tribal custom shortly before entering manhood. At the popular time of the year for these rites (May and June) many septic wounds are admitted.

In group 8 the 107 cases of malnutrition represent only these in whom no other condition was found.

Salpingitis in group 9 comprised the main gynaecological problem. Tuberculous pelvic infection was not diagnosed during this series although we were on the look-out for it. It is surprising that the incidence of puerperal sepsis was so low, especially after one has witnessed a delivery in an African hut.

In group 10, the 69 cases represent those patients previously diagnosed as tuberculous, who, for one reason or another sought re-examination and in whom no further disability apart from their tuberculosis was found.

Rheumatic heart disease (group 11) is relatively common in the Transkei. Pure mitral stenosis, however, is uncommon and the prominent lesion in most cases is mitral incompetence. Of the 11 cases of hypertension seen, in only 3 did symptoms warrant admission, one because of cardiac failure and 2 on account of malignant changes. Cardiopathies of unknown aetiology in Africa are proving a fertile source for investigation at the present time. We were unable to place the 3 cases in any of the new recognized groups.

Amongst the patients with malignancies in group 16, only one went home well. He had a leg amputated for an epithelioma. The diagnosis of carcinoma of the cervix presents no problems; they invariably appear for treatment at stage III or IV and are grossly infected. Thyroid enlargements, mostly diffuse goitres, are extremely common in the female Xhosa but only one carcinoma was encountered.

In the miscellaneous group (group 17) the following may be selected for mention: 3 cases of purulent meningitis; 3 patients with abdominal emergencies all of whom died, 2 after being transferred to Umtata for intestinal obstruction and 1 a few hours after admission for general peritonitis; 2 cases of ainhum; 1 case of diabetes presenting in coma; 1 case of leprosy; and cases of epilepsy, congenital abnormalities and amoebiasis. Syphilis, from all accounts, is a fast disappearing disease in the Transkei; only 1 case, that of perforation of the palate, was seen. Blood for Wassermann tests was taken as a routine measure from all patients attending the antenatal clinic and only 4 were found to be positive; none of these had stigmata of syphilis.

Of the 682 patients admitted, 33 died in hospital—15 in the 0-5 age-group, 6 in the 6-29 group, and 12 in the over-30 age-group. This in no way reflects the actual mortality from disease. If it was at all possible for relations to care for the chronically sick and those about to die, patients were sent home. Many others were refused admission when advanced or untreatable disease was diagnosed.

Also of considerable interest to those who have never worked in an exclusively African practice is the notable absence of diseases so common in a European practice. Coronary thrombosis, peptic ulceration, obliterative arterial disease, varicose veins, and ano-rectal disorders, are some of the conditions seldom encountered in the years of experience of one of us (v. d. W.). It is also surprising that, apart from mild degrees of nutritional anaemia and those who had lost blood from trauma, there were no cases of anaemia warranting treatment.

Patients Excluded from Series. Brief mention should be made of patients treated at the hospital but not included in the series: 104 presented for tooth extractions, 50 adults were circumcised, and 8 were examined for medical certificates. There were also 117 confinements, 108 being normal uncomplicated deliveries. Of the remaining 9, 4 were delivered by Caesarean section and 3 by forceps; there were 2 breech deliveries. Some of these patients were delivered while on treatment for other conditions and are included in the general series.

TUBERCULOSIS

As seen from Table II, there were 394 cases of tuberculosis diagnosed who, to the best of our knowledge, had not been diagnosed or treated before, in addition to 69 patients previously diagnosed as cases of tuberculosis who for one reason or another sought re-examination and in whom no further disability apart from their tuberculosis was found.

Details concerning the 'new cases' and the total cases of tuberculosis admitted will be found in Table III. The

TABLE III. DETAILS CONCERNING NEW CASES OF TUBERCULOSIS AND ADMISSIONS

	Age			Total	'Known Cases'	Admitted
	0-5	6-29	30 and over			
Pulmonary and neck glands	118[1]	60[2]	165[1,3]	343		206
Peritonitis	—	4	6	10		10
Meningitis	5	2	3	10		7
Spine	6	2	2	10	69[5]	10
Hip and knee	—	1	8	9		
Pericarditis	—	3[4]	5	8		8
Liver and spleen	—	—	4	4		4
Total	129	71	194	394		245

(1) 4 patients with tuberculous bone lesions as well. (2) 2 with pregnancy. (3) 5 with pregnancy, 5 with congestive cardiac failure of unknown aetiology, and 1 each with nephritis, pyelonephritis and Addisonian crisis. (4) 2 with pregnancy. (5) 5 with superimposed pneumonia.

maximum incidence of the disease was seen in young children and in the age-group over 30 years. 87% of the cases of tuberculosis had the pulmonary form of the disease. Of the 463 patients (including known cases) 52·9% were admitted, and this number represents 35·9% of the total admissions. As they remained longer in hospital than other patients, approximately 100-110 (60%) of the beds were occupied by patients with tuberculosis at any given time.

The real object of collecting these figures, is to show that of a total of 2,002 *out-patients seen,* 19·6% *were found to have tuberculosis.* This is an alarmingly high figure in an age when tuberculosis in most countries is on the decline, and is especially so when it is considered that this practice

would be very much the same if no hospital existed and general practitioners served the community. It would be interesting to compare our incidence with other hospitals in the Transkei.

Diagnosis

All cases of pulmonary tuberculosis, apart from a few cases in the under-2-years age-group, were X-rayed. In the vast majority there was no doubt at all that the X-rays showed tuberculosis. The gross pathology encountered so often was remarkable for the degree of lung involvement. There were very few adult cases in whom the diagnosis could not be made in the course of a routine chest examination and the physical signs observed would have delighted an undergraduate clinical tutor. One of the main reasons for the advanced state of the disease was the time patients waited after onset of symptoms before making their first visit.

If X-rays were considered doubtful, patients were asked to return later for another X-ray. In this way, for example, patients originally treated as pneumonia were found to have tuberculosis. The examination of sputa for acid-fast bacilli was sometimes of help in coming to a diagnosis. Some of the males had worked on the gold mines and the differentiation between silicosis and tuberculosis or a combination of the two was an occasional problem. Carcinoma of the bronchus or malignant adenopathies may have been missed and treated as tuberculosis but the number of such cases is not likely to have been significant. On the other hand we well remember a case presenting with classical features of advanced carcinoma of the oesophagus, including the X-ray appearance of a barium swallow, who derived his clinical picture from pulmonary tuberculosis with extensive mediastinal fibrosis.

In children under 2 years an intradermal tuberculin test with purified protein derivative (P.P.D.) was used by routine. Only in a few cases in children under 2 years was the skin test used exclusively for diagnosis. The average natural conversion age amongst Africans in the Transkei is unknown. A positive reaction at the age of 4 or 5 years was not considered significant unless other manifestations of tuberculosis were present.

Any young child presenting with malnutrition, otitis media, conjunctivitis, impetigo or parotid enlargement, was immediately regarded as highly suspect, for these signs often masked underlying tuberculosis. All cases with tuberculous adenitis were X-rayed and it was rare not to find lung involvement as well.

The diagnosis of tuberculous meningitis was made on clinical grounds and examination of the cerebrospinal fluid. Culture from spinal, pleural or peritoneal aspirates was attempted on a few occasions, with negative results. Tuberculous pericarditis was the special interest of one of us (v. d. W.) and is the subject of a paper at present being prepared. Tuberculous hepatosplenomegaly was diagnosed by a process of exclusion and response to anti-tuberculous drugs. Five cases of cardiac failure (not included in the cardiology group) were of much interest and although subjected to E.C.G., screening, and venous pressure estimations, they remained a mystery to us. They responded to tuberculous therapy and conventional cardiac treatment but no cause could be found for the failure.

Treatment

With an acute shortage of beds a constant feature of the hospital day, it was imperative to select admissions carefully. The aim was to admit only acute cases and those severe cases who according to our assessment would be cured or much improved by in-patient treatment. We realized that by sending advanced cases away under what amounted to a death sentence, we were subjecting relatives to high doses of active tubercle bacilli. On the other hand, their admission would rapidly turn the hospital into an establishment for the chronically sick where beds for the acuetly ill would be at a premium. So patients too ill to come once or twice a week to the streptomycin clinic were given a lecture on how to keep their infectivity at a minimum and sent home. When patients lived too far away for regular injections a 3 months' supply of I.N.H. was given. From Table III it is seen that just under half the cases were not admitted. These, with patients discharged from hospital, came to a clinic held twice a week for streptomycin injections. I.N.H. and vitamin-B-complex tablets were given at the same time. P.A.S. was only used occasionally on in-patients.

It is difficult to impress on the African mind that treatment needs to be uninterrupted and lengthy. The list of non-attenders grew weekly. A bright sunny day brought 200 patients, a rainy day perhaps 5. Some came regularly for the social chat, others came when they felt cough or dyspnoea troubling them and stopped when they felt better. Treatment is thus very unsatisfactory. The distances patients had to travel, the cost of coming by bus, the obligations of a mother at home or a father in the fields, all added up to sporadic and inadequate attendances.

Discussion

When one is dealing with a combination of poverty, ignorance, bad farming, malnutrition, and the tubercle bacilli acting on a highly susceptible population, the outlook is, to say the least, a cause for concern. Although the anti-tuberculous drugs are a powerful weapon, there seems to be no indication that these drugs are controlling the incidence of the disease. We feel there is an urgent need for a full-scale campaign to be waged against tuberculosis with B.C.G. vaccination of children and public-health demonstrations in elementary hygiene playing a leading part. Furthermore clinics could be established throughout the Transkei, where patients once diagnosed could be offered beds and treatment with a trained nurse in charge. This latter suggestion seems to be the cheapest and most effective means of providing satisfactory treatment for the great numbers unable to gain admission to hospital.

Economically speaking, the whole country must suffer if one of the largest sources of manpower is being rendered incapable of productive work by a chronic and incapacitating disease. It is impossible to estimate the total incidence in the Transkei. We saw only a small portion of the problem. Mass X-ray projects have been in progress for some years but it will be many more before the position can be clarified. In the meantime surely more active steps can be taken to control this pandemic?

SUMMARY

The incidence of disease in a Transkei mission hospital over a 6-month period is presented. Some aspects of the diseases encountered are discussed and the prevalence of

tuberculosis stressed. 19·6% of the patients attending the hospital were found to have tuberculosis. The pulmonary form of the disease was commonest and very often in an advanced stage. It is suggested that there is an urgent need for the institution of more active measures to control the incidence and spread of tuberculosis in the Transkei.

THE 'CLIMATE GROUP' OF RESPIRATORY ALLERGY PATIENTS IN SOUTH AFRICA

THEIR SENSITIVITY TO HOUSE DUST AND DESENSITIZATION WITH EXTRACTS OF THE ALLERGENICALLY POTENT COASTAL HOUSE DUST

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It has already been shown[1] that in South Africa there are many sufferers from vasomotor rhinitis and bronchial asthma who maintain good allergic health inland but who develop more or less severe respiratory symptoms when visiting the coast and more especially the eastern shores of the Union. Indeed such symptoms have not infrequently been initiated at the coast. Similarly there are persons who suffer almost continuously from respiratory allergy at the coast but whose symptoms are ameliorated and often entirely cease when they move inland. These patients are referred to as belonging to the 'climate group' of respiratory allergy.

There are, of course, other sufferers from respiratory allergy whose symptoms are worse inland during the summer (October—March) but who are free from discomfort at the coast. These persons living in the 'grasslands' of South Africa situated mainly in the Highveld region in the interior, are sensitive to grass pollen. They escape this summer pollen hazard at the coast, where there is relatively little grass.

It has become our routine procedure in the study of patients who are subject to respiratory allergy to put the following critical questions to them. The answers at once reveal whether the sufferer does or does not belong to the 'climate group': (*a*) Have you lived or spent a vacation at any coastal town in the Union? and if so, when and where? (*b*) Is your condition the same, better, or worse at the coast? and if worse, in what way?

Patients in the 'climate group' unhesitatingly reply, or indeed spontaneously supply the information, that a visit to the coast is invariably attended by aggravation of symptoms. Analogous questions to patients of this group in coastal towns elicit answers which reveal their improvement in health on moving inland. The following are typical replies of such patients:

Inland patients

'My nose worries me at home, but at the seaside I get asthma as well.'

'We reserved accommodation at a coastal resort for a 3 weeks' holiday, but I had to return after 4 days because of severe asthma.'

'I had been perfectly well for more than 3 years in Johannesburg, but my asthma commenced the first night after arrival in Durban.'

Coastal patients

'I had never been ill until I came to live at the coast, where I suffer from constant colds and developed asthma after about 6 months' stay there.'

'My child had a constant cold at the coast, but he is quite well inland.'

'However much I suffer from nose and chest trouble at the seaside, I get better as soon as I drive out about 25-50 miles inland, and I am quite well as long as I stay there.'

The essential climatic differences between the coastal and inland areas are illustrated in a series of charts already published[1] showing their respective climate patterns. In brief, the coastal climate is characterized by a high temperature and high relative humidity during the day and throughout the year, both within narrow range, whereas in inland regions their range is wide in relation to day and night and summer and winter. These different climates are contrasted in Fig. 1 in regard to the inland city of Bloemfontein and the coastal city of Durban.

The mediating agents between the almost constant warmth and humidity of the coast and the precipitation of symptoms in the patient in these circumstances are still under investigation and various lines of approach are being studied.

The evidence so far accumulated in explanation of the existence of the 'climate group' of respiratory allergies eliminates, as direct causative agents, pollens of the local vegetation, atmospheric moulds, and other exogenous allergens. The most striking fact, however, that has emerged in the skin testing of these patients over the years is their high degree of sensitivity to house dust.

It then became a matter of interest and importance to find whether there was any difference between inland and coastal house dust. As a preliminary measure to that end an investigation[2] was carried out on 123 patients who were each tested with extracts of coastal and inland house dust. Of these, 90 gave no reaction at all to the inland, but a marked positive (+++) reaction to coastal house dust extract, and often even to its one-hundredth dilution. It became abundantly clear, not only from this experiment but also from subsequent experience, that coastal house dust is without doubt allergenically more highly potent than that from inland regions. Recently with the cooperation of Dr. H. D. Barnes of this Institute, 'Standard Purified Antigen' was prepared, by the methods described by Rimington and Maunsell,[3] from fresh batches of both inland and coastal house dusts. The high allergenic potency of coastal house dust was again amply confirmed. This is well shown in Table I, where the skin-test reactions with these purified coastal and inland antigens are compared.

TABLE I. COMPARISON OF SKIN-TEST REACTIONS WITH VARIOUS DILUTIONS OF THE STANDARD PURIFIED ANTIGENS OF COASTAL AND INLAND HOUSE DUSTS

House Dust Purified Antigen Dilutions	*Patient P.*		*Patient L.*		*Patient W.*	
	Coastal	*Inland*	*Coastal*	*Inland*	*Coastal*	*Inland*
1 : 100,000	++	—	+++±	—	+++±	+±
1 : 10,000	+++±	±	+++±	±	—	+±
1 : 1,000	—	++±	—	+	—	+++

The reason for the higher allergenic potency of coastal house dust is as yet not scientifically established, although

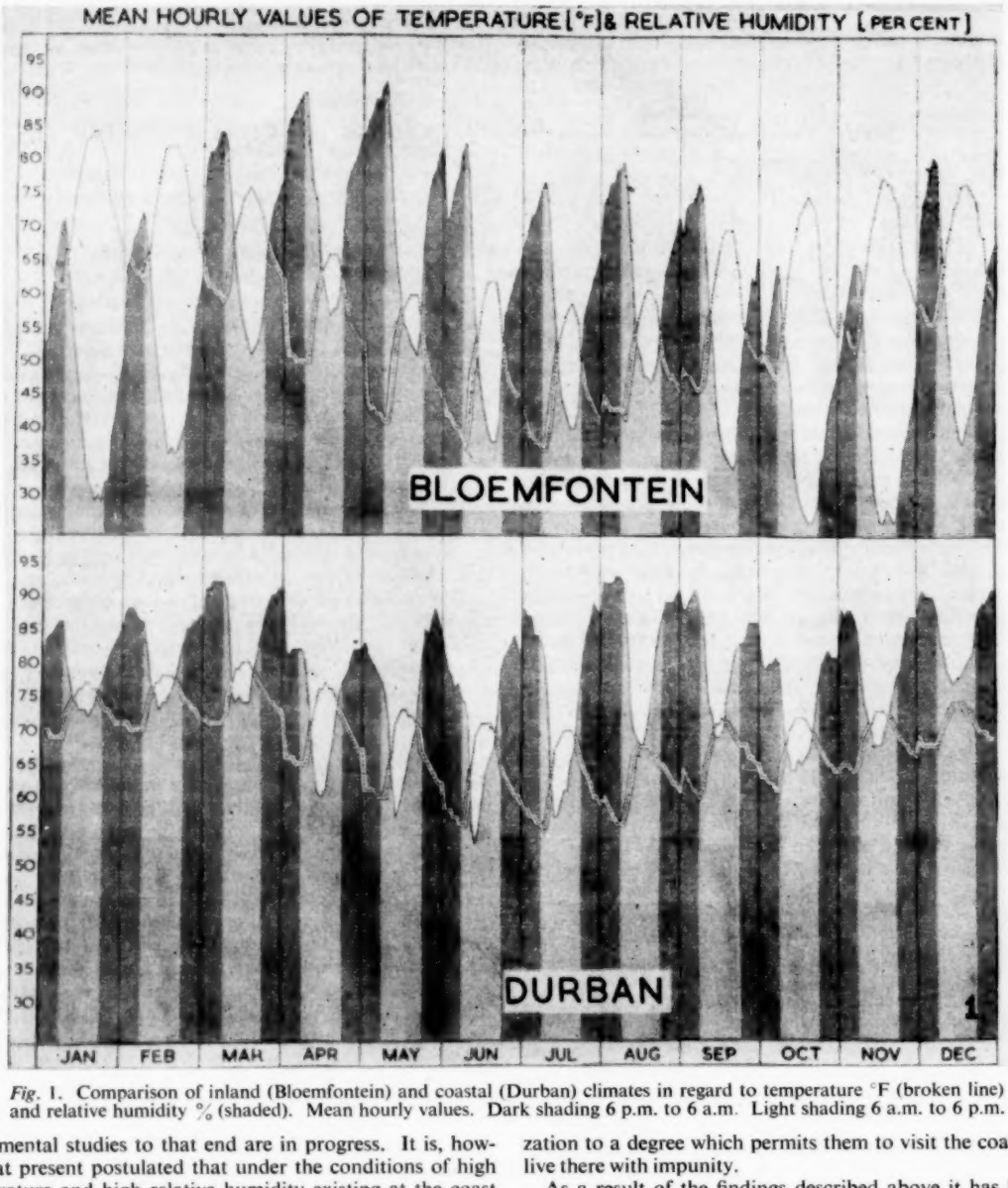

Fig. 1. Comparison of inland (Bloemfontein) and coastal (Durban) climates in regard to temperature °F (broken line) and relative humidity % (shaded). Mean hourly values. Dark shading 6 p.m. to 6 a.m. Light shading 6 a.m. to 6 p.m.

experimental studies to that end are in progress. It is, however, at present postulated that under the conditions of high temperature and high relative humidity existing at the coast there is a more prolific growth of atmospheric bacteria and fungi which biologically activate the local house dust to a greater allergenicity. Other lines of investigation into the causes of this increase in potency are being pursued. In the meantime, from the clinical angle it suffices to say that the 'climate group' patient is worse at the coast and that coastal house dust as an allergen is harmful to him.

A number of cases in the 'climate group' have been submitted to desensitization with extracts of coastal house dust, and although it is too early to be quite definite, there are indications that these patients often benefit by such desensitization to a degree which permits them to visit the coast or to live there with impunity.

As a result of the findings described above it has become necessary to regard house dust derived from the coast as an important and valuable allergen, especially for allergic patients in the 'climate group'. It is for this reason that house dust extracts are now being prepared in our laboratories from coastal house dust.

These extracts are issued at the request of practitioners both for skin testing and desensitization purposes.

SUMMARY

The 'climate group' of respiratory allergy patients in South Africa is defined as including those whose symptoms of

vasomotor rhinitis or bronchial asthma are aggravated at the coast, where the climate is characterized by constant high temperature and high relative humidity.

The 'climate group' of respiratory allergy patients invariably have a high degree of sensitivity to house dust.

House dust from the coast is shown to be more allergenically potent than that from inland areas.

There is evidence that the use of extracts of coastal house dust is of value in the desensitization of respiratory allergenic patients of the 'climate group'.

House dust extracts are now prepared from coastal house dust for skin testing and desensitization purposes.

Thanks are due to Miss S. E. McNeil, B.Sc. (Hons.), for her assistance in the drawing of Fig. 1, which was prepared from data in the Report of the Weather Bureau of the Union of South Africa, 1950 (Government Printer, Pretoria).

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DIET, BLOOD CHEMISTRY, BLOOD COAGULATION AND FIBRINOLYSIS IN RELATION TO CORONARY HEART DISEASE: AN INTER-RACIAL STUDY*

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Several genetic and environmental factors predispose towards the development of coronary heart disease. These factors may exert their effects through various mechanisms; of these, the most widely investigated are changes in the blood chemistry (particularly its lipid components) and alterations in the coagulability of the blood or in its fibrinolytic activity. In South Africa, among the White population, the death rate from coronary heart disease is very high, whereas among the Bantu it is extremely low. It was felt, therefore, that some assessment of the importance of the above mechanisms in coronary atherogenesis could be obtained by a comparative study in groups of Bantu men, and in White men with and without overt coronary heart disease. Accordingly, 80 apparently healthy White men, 48 White men with clear evidence of coronary heart disease and 52 apparently healthy rural Bantu men were selected for this study.

The mean age of the 52 Bantu men was 33·8 years. For the purposes of analysing the data, they were compared with an equal number of age-matched White controls (mean age 34·6 years). The mean age of the 48 coronary subjects was 52·3 years; it was not possible to age-match them with Bantu men; they were, therefore, compared with an age-matched group of 52 White subjects of mean age 46·4 years.

RESULTS

A. *Diets*

The average daily food consumption of each subject was recorded and the fat-calorie ratio calculated from food tables. There was no significant difference between the mean daily caloric intake of the 3 groups (control, 2,939 ± 571;† coronary 2,558 ± 517; Bantu, 2,714 ± 506). The fat-calorie ratio was not significantly different in the control (42·7 ± 8·7%) and coronary (41·2 ± 12·5%) groups; in the Bantu group, however, it was very much lower (17·8 ± 6·9%). It was noted that since the onset of their illness, many of the coronary subjects had been tending to restrict their dietary fat intake. Among the Bantu, the dietary fat was derived mainly from maize meal and from soured milk (*amasi*).

B. *Blood Pressure*

No significant differences were noted between the Bantu group and their age-matched controls or between the coronary group and their age-matched controls.

C. *Blood Chemistry*

1. *Serum-cholesterol.* The mean level in the Bantu (147 ± 34 mg. per 100 ml.) was very significantly lower than in their age-matched White controls (243 ± 46 mg. per 100 ml.); this difference was present at all age levels. The mean level in the coronary group (285 ± 44 mg. per 100 ml.) was significantly higher than in their age-matched controls (262 ± 41 mg. per 100 ml.). At the ages of 36-45 years, the difference between the mean level of the controls (251 ± 45 mg. per 100 ml.) and the coronary group (303 ± 50 mg. per 100 ml.) was highly significant; at the ages of 46-55 years and 56-65 years, the mean levels did not differ significantly.

2. *Serum-albumin.* The mean level in the Bantu (4·71 ± 0·3 g. per 100 ml.) was significantly lower than in the controls (4·91 ± 0·5 g. per 100 ml.) but neither of these differed significantly from the coronary group (4·81 ± 0·5 g. per 100 ml.).

3. *Serum-globulin.* The mean level in the Bantu (2·90 ± 0·6 g. per 100 ml.) was significantly greater than in the controls (2·38 ± 0·5 g. per 100 ml.) and in the coronary group (2·38 ± 0·6 g. per 100 ml.).

4. *Thymol-turbidity.* The mean value in the Bantu (1·5 ± 1·7 units) was significantly greater than in the controls (1·2 ± 0·5 units) and in the coronary group (1·2 ± 4 units).

5. *Zinc-turbidity.* This was greatest in the Bantu (11·5 ± 3·8 units) and least in the coronary group (5·3 ± 2·6 units) while the controls were intermediate (6·8 ± 3·0 units); all these values were significantly different.

6. *Serum urea.* The mean level in the Bantu (21·6 ± 6·5 mg. per 100 ml.) did not differ significantly from that of their age-matched controls (25·5 ± 9·2 mg. per 100 ml.). The mean level in the coronary group (28·0 ± 10·2 mg. per 100 ml.) did not differ significantly from their age-matched controls (24·7 ± 8·8 mg. per 100 ml.).

7. *Plasma uric acid.* The mean level in the Bantu (4·22 ± 1·06 mg. per 100 ml.) was very significantly lower than in the controls (5·34 ± 1·02 mg. per 100 ml.). The data for the coronary group are not yet complete.

Comment. The lower serum-cholesterol levels in the Bantu are once more confirmed; the data are consistent with the theory that this is partly determined by the diet of the Bantu, which is low in total fat but relatively rich in unsaturated vegetable fats. The role of genetic, hormonal and other factors in producing the low serum-cholesterol level has not been assessed in this survey. The data are also consistent with the theory that the low serum-cholesterol level is one of the factors which protects the Bantu from coronary heart disease. In the control and coronary groups, the differences in the serum-cholesterol levels are trivial except at the ages of 36-45 years; it will be realized, however, that many of the older 'controls' probably have substantial atherosclerosis and some of them may later develop clinical evidence of coronary heart disease.

It is not known whether the peculiarities of the serum-protein pattern and the flocculation tests in the Bantu are of genetic or environmental origin, and their significance in relation to the development of coronary heart disease cannot be defined at present. There is a known association between high serum-urate levels and coronary heart disease; furthermore, gout, like coronary heart disease, is rare in the Bantu; hence, the relatively low serum-urate levels in the Bantu may be relevant to the problem of atherogenesis.

D. *Blood Coagulation*

(*a*) Comparison of the coronary group with their age-matched

* Abstract of papers presented at meetings of the Research Forum, University of Cape Town, held at Groote Schuur Hospital, Cape Town, on 4 and 17 June 1958.

† Standard deviation.

controls showed no significant difference with respect to the following tests of coagulation:

1. Coagulation time in glass or in silicone-treated tubes.
2. Prothrombin consumption during coagulation of blood in glass or in silicone-treated tubes.
3. Factor V and anti-haemophilic globulin content of plasma.
4. Plasma prothrombin as measured by Quick's (one stage) method, the P. and P. method of Owren, the Russell viper venom (R.V.V.) method, the R.V.V.-cephalin method, or the Biggs method.
5. Factor VII measured on serum.

(*b*) When the Bantu group was compared with the age-matched controls, no significant difference was found in the following tests of coagulation function:

1. Coagulation time in glass or in silicone-treated tubes.
2. Prothrombin consumption during coagulation of blood in glass tubes.
3. Factor V in plasma.
4. Plasma prothrombin when measured by Quick's method, R.V.V. method or R.V.V.-cephalin method.

The following significant differences between the Bantu and their age-matched controls were noted:

1. The Bantu consumed more prothrombin than the controls during coagulation of blood in silicone-treated tubes.
2. The Bantu had greater amounts of antihaemophilic globulin in the plasma.

In these 2 respects the Bantu blood might be considered potentially more coagulable. On the other hand:

1. The Bantu had less Factor VII in their serum than the controls.
2. There was less prothrombin in the plasma of the Bantu group when measured by Owren's P. and P. method which is sensitive to the presence or absence of Factor VII). There was also less prothrombin when it was measured by Biggs' method, which is said not to be sensitive to a deficiency of Factor VII.

In these 2 latter respects, the Bantu blood might be considered less coagulable than the White controls.

Blood thromboplastin generation was measured in the 3 groups. The coronary patients generated a little more thromboplastin than the controls; in the Bantu group this difference from control was more clear-cut than in the coronary group. There was no significant difference between the amount of thromboplastin generated by the Bantu and the coronary groups.

Comment. This phase of the investigation did not provide any clear evidence of a greater tendency to coagulation in the blood of patients with coronary heart disease than in apparently healthy controls; nor did it explain the relative immunity of the Bantu from thrombotic disease. In fact, the results of these investigations might suggest that the blood of Bantu men has a greater tendency to clot than that of White men.

E. *Fibrinolysis*

Fibrinolytic activity was estimated as the clot-lysis time of a 1 : 10 diluted blood clot. It was found that clot-lysis in the Bantu (mean: 5·59 ± 5·7 hours) was almost twice as fast as in their age-matched controls (mean: 10·44 ± 10·1 hours); this difference was significant at the 1% level. There was no significant difference between the mean lysis time of the coronary group (12·31 ± 13·4 hours) and their age-matched controls (11·03 ± 22·5 hours).

Whereas in the Bantu 8 clots lysed in less than 2 hours, in none of the control or coronary subjects was a lysis time of under 2 hours recorded. Only 1 Bantu clot took longer than 16 hours to lyse but 17·6% of the coronary and control subjects had lysis times of over 16 hours and in 12·8% it was over 20 hours. Studies on the day-to-day variation of fibrinolytic activity in the same subjects under standard conditions indicated that apparently spontaneous fluctuations of up to 300% may occur.

Although the Bantu have faster lysis times and lower serum-cholesterol levels than the controls, these factors do not seem to be closely related. Changes in the serum-cholesterol level induced by feeding 2 Bantu subjects in the metabolism ward with saturated and unsaturated fats, failed to show any correlation with fibrinolytic activity.

Comment. It appears that phases of slow fibrinolysis are characteristic of the White race, but the role that this may play in atherogenesis remains purely speculative. The Bantu is characterized by a greater fibrinolytic activity but whether this is the result of hepatic dysfunction, dietary custom or any other inherent or environmental factors is at present unknown.

Acknowledgment is made to the South African Council for Scientific and Industrial Research and to the following additional sources of financial aid in these studies: the National Heart Institute of the United States Public Health Service, the Cape Town City Council, the South African Mutual Life Assurance Society, the Cape Fishing Industry, the A. R. Richardson Research Fund and the Staff Research Fund of the University of Cape Town.

OFFICIAL ANNOUNCEMENTS : AMPTELIKE AANKONDIGINGS

MEDICAL ASSOCIATION OF SOUTH AFRICA : ANNUAL GENERAL MEETING; FEDERAL COUNCIL. MEDIESE VERENIGING VAN SUID-AFRIKA : ALGEMENE JAARVERGADERING; FEDERALE RAAD

Notice is hereby given that the Annual General Meeting of the Medical Association of South Africa will be held in the Rivieria Recreation Hall opposite the General Hospital, Pretoria, on 1 October 1958, at 9.30 a.m.

Agenda

1. Minutes.
2. Annual Report and Balance Sheet.
3. Election of Auditors.
4. Induction of President.
5. Other Business.

At the conclusion of business, the meeting will be adjourned and reconvened at 8.15 p.m. in the same Hall, where the President will deliver his Presidential Address. Academic dress should be worn.

A. H. Tonkin
Secretary

Medical House
Cape Town
11 August 1958

FEDERAL COUNCIL

Notice is hereby given that a meeting of the Federal Council will be held in the Rivieria Recreation Hall opposite the General Hospital, Pretoria, commencing on 1 October 1958, at 10 a.m.

Agenda

1. Notice convening the meeting.
2. Proxies.

Kennis geskied hiermee dat die Algemene Jaarvergadering van die Mediese Vereniging van Suid-Afrika gehou sal word op 1 Oktober 1958, om 9.30 vm., in die Rivieria-Ontspanningsaal oorkant die Algemene Hospitaal, Pretoria.

Agenda

1. Notule.
2. Jaarverslae.
3. Verkiesing van Ouditeure.
4. Inlywing van President.
5. Ander Besigheid.

Na afhandeling van die werksaamhede, word die vergadering verdaag en om 8.15 nm. in dieselfde saal hervat. Die president sal dan sy presidentsrede hou. Akademiese drag word verkies.

A. H. Tonkin
Sekretaris

Mediese Huis
Kaapstad
11 Augustus 1958

FEDERALE RAAD

Kennis geskied hiermee dat 'n vergadering van die Federale Raad gehou sal word in the Rivieria-Ontspanningsaal oorkant die Algemene Hospitaal, Pretoria. Aanvang 10 vm. op 1 Oktober 1958.

Agenda

1. Kennisgewing wat die vergadering belê.
2. Volmagte.

3. Minutes of previous meeting (circulated).
4. Matters arising out of the minutes.
5. Financial statement by Honorary Treasurer.
6. Report of the Executive Committee.
7. Reports of other Committees.
8. Reports deferred from previous meeting.
9. Notices of motion transferred from previous meeting.
10. New notices of motion.
11. Other business.

A. H. Tonkin
Secretary

Medical House
Cape Town
11 August 1958

3. Notule van die vorige vergadering (reeds uitgestuur).
4. Sake wat uit die notule voortspruit.
5. Finansiële verslag van die Ere-Penningmeester.
6. Verslag van die Uitvoerende Komitee.
7. Verslae van ander Komitees.
8. Verslae van vorige vergadering oorgehou.
9. Voorstelle waarvan kennis op vorige vergadering gegee was.
10. Nuwe kennisgewings van voorstelle.
11. Ander sake.

A. H. Tonkin
Sekretaris

Mediese Huis
Kaapstad
11 Augustus 1958

DR. J. S. DU TOIT

AN APPRECIATION BY DR. A. W. S. SICHEL

In undertaking to write an appreciation of my lifelong friend, Dr. J. S. du Toit, I realize that I have set myself a difficult task. I scarcely know how to begin and what to say because there is so much that could be said, but what I intend to say is very personal.

It would be redundant for me to record factually the many positions which he held both within and without the profession in a life ripe with achievement, except that such record would be impressive. The wonder is that he could apply his mind to the multifarious affairs in which he was interested with such satisfying results.

Dr. J. S. du Toit
Cape Times

J.S. and I have been so intimately associated with each other in our professional careers and in our work for the Medical Association of South Africa over so long a period that the parting leaves me for the moment unable to give more than an outline of what the years have meant to us.

My first contact with him was in the spring term of the year 1907, when we found ourselves fellow medical students at the University of Edinburgh. For a while we lived together in 'digs', where an opportunity was afforded me to appreciate at close grips his virtues and his weaknesses—qualities inherent in all human beings. This insight into his character was to prove invaluable to me in the years that ensued.

We graduated together in 1912, after which our ways parted for a while until on my return to South Africa in 1920 we found ourselves practising the same speciality in Cape Town. Of more significance, however, is the fact that in that same year we first became associated in our work for the Cape Western Branch of the Medical Association, out of which there ripened a friendship which remained unshaken to the last. As office-bearers we were members of the Branch Council, on which we have served continuously from 1921 to the present time.

Du Toit had been a member of the Federal Council prior to 1935, the year when I was first elected to that body, and since then we have served as members of the Council, and of its Executive, until a year ago, when he relinquished the office of Honorary Treasurer of the Association, which post he adorned for over 30 years. The Benevolent Fund of the Association was his special baby and it is due largely to his individual effort that it has gone from strength to strength, so that today we are able to give material financial assistance to our less fortunate colleagues and their dependents. It was du Toit's original idea that gave rise to the system of sending votive cards instead of flowers at funerals of colleagues who had passed on. The opportunity now occurs for all who admired him and his work to carry out his idea and so augment the Benevolent Fund.

My mind goes back to the numerous occasions on which we travelled together to attend Association meetings, in the earlier days always by train, on occasion by car and in recent years exclusively by air. Away from the worries of practice J.S. became more boyish in spirit and entered into everything with zest and good humour. I still have ringing in my ears his characteristic exclamation 'Oh Lordie' when told something which occasioned surprise.

Attendance at Federal Council meetings in the 'good old days' was a pleasurable experience and even dissension among members or groups was friendly. In recent years the meetings are made of sterner stuff but the anticipation of acrimonious debates and possible unpleasantness did not deter du Toit from playing his part when duty called. Although his oratory may not have been impressive and if he lacked ability in the tactics of debate, nevertheless he succeeded in holding the attention of the meeting because he spoke from his heart and resisted the temptation of gibing at his opponents.

In his very person J. S. du Toit was the greatest binding force in our time, in that his long and loyal service to the Association undoubtedly has kept its ranks united when a rift so easily could have occurred. We who are left to carry on must always feel inspired by the wonderful example he set, and by the honesty of purpose he displayed in serving the interests of his fellow members.

Our close association as friends and colleagues remained unbroken from the day of graduation to the last days of his life. In our special sphere of practice, where we might be termed opponents, there was nothing but harmony and ethical imputations were unknown. For 17 years we were Joint Ophthalmic Specialists to the Railways and Harbours Sick Fund and for 12 years Joint Lecturers and Heads of our Department in the University of Cape Town. We were honoured by the award of the Association's Gold Medal at the same ceremony during the Congress in Johannesburg in 1952 and barely a year ago we were again honoured by presentations made by Federal Council members to us in Durban on the occasion of relinquishing our respective offices. It is my proud boast that throughout the long period of 50 years since first we met, when jealousy or little-mindedness so easily could have caused a quarrel, never once did an angry word pass between us. This to me is a great consolation in the loss of such a friend.

At the funeral service held in the Groote Kerk, Cape Town, it was said of him by one of the officiating ministers that 'he was a good man'. Not only was he a good man, he was a big man, big in heart and big in his achievements. He was a devoted husband, father and grandfather. Many of the things he did and said must be viewed in relation to his family environment, in that he put happiness in his home life before everything else. Our hearts go out in deep sympathy to his widow and all those who have been bereaved.

Du Toit was scrupulously careful in his person and in his mode of living. He was a non-smoker and an abstainer while taking precautions in many little ways to preserve good health, but despite all the care he exercised in order to keep fit it was beyond his power to counter the fatal cardiac blow when it fell so suddenly.

His long and devoted service, and his loyalty to his Association

will be an inspiration to those of us who are left to give guidance of the type for which he always strove, and will serve as a pattern to our younger colleagues who may aspire to play their part in the organized activities of our profession.

Recently the following passage which I quote happened to catch my eye and it seems to me an appropriate note on which to end:

'When the sun goes below the horizon, he is not set; the heavens glow for a full hour after this departure. And when a great and good man sets, the sky of this world is luminous long after he is out of sight. Such a man cannot die out of the world. When he goes he leaves behind much of himself. Being dead he speaks.'

'N WAARDERING DEUR DR. J. K. DE KOCK

Die onverwagte en skielike heengaan van dr. J. S. du Toit was vir my persoonlik 'n baie groot skok, maar wanneer ek daaroor nadink, het gebeur wat ek baiekeer voorspel en ook in die stilte verwag het: Hy het heengegaan soos hy dit sou verlang het—hard aan die werk, met toewyding, opoffering en entoesiasme, tot die dag voor sy dood.

As iemand wat 19 jaar in noue verband met hom saamgewerk het, wil ek graag meedeel hoe ek hom geken het. Ek het met hom as 'n pasiënt 37 jaar gelede kennis gemaak. Die indruk wat hy toe op my gelaat het was 'n netjies geklede, bekwame jong dokter wat sag en min gepraat het. As student aan die Universiteit Kaapstad het ek die vriendelike gasvryheid van dr. en mev. J. S. du Toit, aan hul woning in Seepunt, baie waardeer en op prys gestel.

Hierdie man het my hele mediese loopbaan en toekoms verander toe hy my beweeg het om die algemene praktyk vaarwel te sê, my as oogarts te bekwaam en by hom aan te sluit. Sy leiding, raad en hulp sal altoos 'n aangename nagedagtenis wees. Nie alleen het hy dit aan *my* gedoen nie, maar daar is ander wat desgelyk kan getuig.

As senior oogarts van Kaapstad was hy 'n uitstaande persoon en bekend oor die hele land. Sy werk was van 'n baie hoë gehalte en hy het 'n baie besige en groot praktyk gehad. Met sy geweldige gees, werkkrag en uithoudingsvermoë het hy homself nooit gespaar nie. Hoe hy dit alles jaar na jaar kon bybring en volhou, was vir my altoos 'n raaisel. Min mense sal hom dit kan nadoen. Die verskillende rade, komitees, direksies, ens. waarop hy gedien het, is voorbeelde van sy belange en aktiwiteite, buiten dié van sy groot praktyk. Daarby het hy nog in boerdery belanggestel en was hy die eienaar van twee plase.

Gedurende die 19 jaar wat ons saamgewerk het, het hy nooit een werklike vakansie gehad nie. Sy vakansies het bestaan uit die bywoning van vergaderings van die Federale Raad en van die mediese kongresse. So af en toe het hy 'n lang naweek afgeneem om te gaan jag of na sy plaas te gaan of die Skool vir Blindes in Worcester te besoek.

Na aan sy hart was die Mediese Vereniging van Suid-Afrika en sy troetelkind: die Liefdadigheidsfonds van die Vereniging. Sy 32 jaar getroue diens as Tesourier is hiervan bewys. Vir die Volkshospitaal, Kaapstad, het hy, as ere-Superintendent, 'n baie sagte plekkie gehad. Hy het 'n besonder goeie deursig van geldsake gehad en hy het ook die Groote Kerk, Kaapstad, as voorsitter van die finansiële komitee en ouderling gedien.

Vir liefdadigheid het hy 'n ope hand gehad en het hy altyd ruim bygedra. Die minderbevoorregtes het hy altyd tegemoetgekom en daar is baie wat hom hierom sal mis. Hy was sterk gekant teen verkwisting, soos die half-duim potlood op sy lessenaar, die saamgeperste stukkies seep op sy wasbak en die oopgeskeurde koeverte, wat gebruik is vir ruwe aantekeninge, getuig het.

Dr. du Toit was 'n man met 'n sterk persoonlikheid, ondernemingsgees, deursettingsvermoë en hy wou graag aan die spits van sake staan. Hierdie eienskappe het hom soms met van sy kollegas en ander, met wie hy in nou verband gestaan het, in meningsverskil gewikkel. Uit sy oogpunt beskou, was hy oortuig dat hy reg en opreg handel. Hy was 'n moeilike en gedugte teenstander; dog as vriend was hy heelhartig aan jou kant.

Ek persoonlik sal hom onthou as vriend en iemand wie aan my goed gedoen het.

MEMORIAL TO THE LATE DRS. D. DOWIE DUNN AND J. WOLF RABKIN

The Honorary Medical Staff of Woodstock Hospital, Cape, have donated to the hospital a memorial to the late Drs. D. Dowie Dunn and J. Wolf Rabkin, who were the first paediatricians to serve on the honorary medical staff of the Woodstock Hospital and in their lifetime gave unstinted and devoted attention to the children who came under their care in the wards of the hospital. The memorial is in the form of a statuette (boy with dolphin) which stands at the entrance of the Denis Buxton children's ward of the Woodstock Hospital.

The memorial was dedicated at a ceremony which took place in this ward on Sunday morning 3 August 1958. Dr. P. J. M. Retief, Chairman of the hospital medical sub-committee, welcomed a representative gathering of colleagues, nursing staff and friends and relations. In his address, Dr. Retief said that it was with honour, respect and due humility that the honorary medical staff decided to erect a memorial to two great lovers of children—Dr. Dowie Dunn and Dr. Wolf Rabkin. These two eminent doctors had in their lifetime set the stamp of sound paediatric practice in the Cape, and their work in the children's ward of the Woodstock Hospital would never be forgotten. The excellent reputation the Woodstock Hospital holds in its treatment of sick children was established by these two physicians, upon whose excellent foundations the hospital continues to build and consolidate its repute in this field.

Dr. A. Falconer, Medical Superintendent, in accepting the statuette on behalf of the Provincial Administration, praised the work done by these two outstanding paediatricians; and Mr. A. Friedlander, Chairman of the Southern Suburbs Hospital Board, on behalf of the relatives of the late Drs. Dowie Dunn and Wolf Rabkin, thanked the honorary medical staff for the noble thought that prompted the decision to erect and dedicate this memorial to these eminent men. Mr. Friedlander said it was good to know that great men and their work were not forgotten; the Woodstock Hospital had added further lustre to its reputation by remembering to honour the memory of these physicians.

PASSING EVENTS : IN DIE VERBYGAAN

Dr. H. O. Hofmeyr het sy huisadres van Welgemoed, Harfieldweg, Kenilworth, verander na Fairways 21, Kusweg, Mouille-Punt, Kaapstad. Telefoon 44-8995.

* * *

Dr. W.-F. Exner Baumann, of National Mutual Building, 17 Church Square, Cape Town, returned on 2 August from a study tour overseas, during which he visited clinics in London, Edinburgh and Athens.

* * *

Rehabilitation Association for Injured Workmen. The fortnightly clinical meetings are now being held in the gymnasium at the Workmen's Rehabilitation Centre, corner of Esselen and King Streets, Johannesburg, on Thursday afternoons at 5.15 p.m. If any practitioner desires to present a case at the clinical meetings he should communicate with the Secretary/Manager at the above address.

* * *

Mr. Bryan Murless, F.R.C.S., F.R.C.O.G., has changed the address of his consulting rooms, and will continue to practice from 1306 Provident Assurance House, corner of Field and Smith Streets, Durban.

* * *

Dr. David Ordman of the South African Institute for Medical Research, Johannesburg, has left for overseas to attend the 4th World Assembly of the Israel Medical Association in Tel Aviv, at which he is representing the Medical Association of South

Africa, and the International Congress of Allergology in Paris.

* * *

Dr. R. Hoffenberg, who has recently returned from the USA and the UK, will address a special meeting on Tuesday 26 August at 12 noon, in the large A-floor Lecture Theatre, Groote Schuur Hospital, Cape, when his subject will be 'The Use of Isotopes in Medicine'.

* * *

Dr. E. Alan Price, M.B., B.Ch. (Rand), D.M.R.D., R.C.P. & S. (Eng.), formerly Radiologist to the Johannesburg General Hospital, has now commenced practice as Consultant Radiologist at 401 Medical Arts Building, 220 Jeppe Street, Johannesburg. Telephones: Rooms 22-1735/6, residence 46-2686.

* * *

Northern Areas Division, Cape Western Branch. Members and others are invited to attend the monthly meeting of the Division on Thursday 28 August at 8.15 p.m. in the Old Council Chamber, Klosser Street, Parow, Cape. Dr. Ronald Singer, Department of anatomy, University of Cape Town, will address the meeting on 'Fossil Hunting', illustrated by lantern slides.

Afdeling Noordelike Gebiede, Tak Wes-kaapland. Lede en andere word uitgenooi om die maandelikse vergadering van die Afdeling by te woon op Donderdag 28 Augustus, om 8.15 nm. in die Ou Raadsaal, Klosserstraat, Parow, Kaap. Dr. Ronald Singer, Departement van Anatomie, Universiteit Kaapstad, sal die vergadering toespreek oor, ‚Fossiele-jag' en hy sal sy lesing illustreer met ligskyfies.

* * *

Mr. David A. Muskat, Dip. Med., Ch.M., Surgeon, has moved his consulting rooms to 504 Medical Arts Building, corner of Jeppe and Troye Streets, Johannesburg. The telephone number 22-9208 remains unchanged.

Dr. David A. Muskat, Dip. Med., Ch.M., Chirurg, het sy spreekkamers verplaas na Medical Arts Building 504, hoek van Troye- en Jeppestraat, Johannesburg. Die telefoonnommer 22-9208 bly dieselfde.

* * *

Mr. J. A. S. Marr, F.R.C.S. (Eng.) has moved his consulting tooms from Netherlands Bank Buildings, 85 St. George's Street, ro 111 Medical Centre, Heerengracht, Cape Town. Telephones nnchanged): Rooms 3-1940. residence 7-1238.

Dr. J. A. S. Marr, F.R.C.S. (Eng.) het sy spreekkamers van Netherlands Bank-gebou, St. Georgestraat 85, verander na Mediese Sentrum 111, Heerengracht, Kaapstad. Telefoon (onveranderd): Spreekkamer 3-1940, woning 7-1238.

* * *

Mr. E. B. Malherbe, M.Ch. (Cape Town), has moved his consulting rooms from Netherlands Bank Buildings, 85 St. George's Street, to 111 Medical Centre, Heerengracht, Cape Town. Telephones (unchanged): Rooms 2-8902, residence 69-1217.

Dr. E. B. Malherbe, M.Ch. (Kaapstad), het sy spreekkamers van Netherlands Bank-gebou, St. Georgestraat 85, verander na Mediese Sentrum 111, Heerengracht, Kaapstad. Telefoon (onveranderd): Spreekkamer 2-8902, woning 69-1217.

A Mental Health Campaign is now being organized by the Tara and Sterkfontein Hospitals to take place in Johannesburg from 1-11 October. Its aim is to instruct the profession and the public in matters concerning mental illness and mental health, and to combat prejudice and fear. An intensive programme has been organized. For the public, Tara and Sterkfontein Hospitals will have visiting days. There is a large exhibition at Tara, films will be shown and there will be much about it on the radio and in the press. For the medical profession, there will be a Southern Transvaal Branch meeting of the Medical Association of South Africa to be addressed by Professor Rümke, the prominent psychiatrist from Utrecht, Holland, a Study Day at Sterkfontein, a 'Workshop' on psychopathy, and so on. A programme of the campaign will be published in a later issue of the *Journal*.

* * *

Unie van Suid-Afrika, Departement van Gesondheid. Nuusbrief nr. 32 van 1958. Opgawes van gedugte epidemiese siektes en poliomiëlitis in die Unie gedurende die tydperk 1 tot 7 Augustus 1958.

Pes, Pokkies. Geen.

Tifuskoors. Kaapprovinsie. Twee (2) Naturellegevalle, insluitende een (1) sterfgeval van tifuskoors aangemeld uit die distrik St. Marks.

	Poliomiëlitis				
	Bl.	*Nat.*	*Kl.*	*As.*	*Totaal*
Transvaal	2	2	–	–	4
Kaapprovinsie ..	1	3	1	–	5
Oranje-Vrystaat ..	–	–	–	–	–
Natal	–	1	–	–	1
Totaal ..	6	3	4	1	14

Korreksies:

Kaapprovinsie: Een (1) Blanke geval, vermeld in Nuusbrief nr. 8 van 1958, word nou gediagnoseer as ‚nie poliomiëlitis nie'.

Oranje-Vrystaat: Een geval wat in Nuusbrief nr. 9 van 1958 vermeld is as Blank, moet verander word na 'n ‚Naturellegeval'.

Plaaslike Besture		*Bl.*	*Nie-bl.*
Transvaal:			
Johannesburg-munisipaliteit ..	S	2	
Naboomspruit-distrik	P		1
Vanderbijlpark-munisipaliteit ..	S		1
Kaapprovinsie:			
Kaapstad-munisipaliteit	S	1	
Port Elizabeth-munisipaliteit ..	S		3
Willowmore-afdelingsraad ..	P		1
Natal:			
Umlazi-distrik	P	1	

Korreksies:

Kaapprovinsie: Een (1) Blanke geval uit Kokstad-munisipaliteit wat in bylae tot nuusbrief nr. 8 van 1958 verskyn het, is nou gediagnoseer as ‚nie poliomiëlitis nie'.

In bylae tot nuusbrief nr. 26 van 1958: Vervang ‚Paarl municipality' met ‚Uitenhage municipality'.

Oranje-Vrystaat: Een (1) poliomiëlitisgeval in Kroonstad-munisipaliteit wat in nuusbrief nr. 9 van 1958 as Blank gerapporteer is, word nou aangegee as 'n Nie-blanke geval.

P = Plattelands. S = Stedelik.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

'DEANER'

Riker Laboratories introduce this new preparation and supply the following information:

Most patients with chronic fatigue, lassitude, depression, morning tiredness, headache and other neurasthenic manifestations have at one time or another been treated with one of the many tranquillizers. Results were varied, but not sufficiently good to be impressive. Some studies have actually shown placebos to be more effective than the genuine tranquillizer.

However, the same conditions, so burdensome to the busy general practitioner, can now be more successfully treated by means of a molecule entirely new to medicine, 2-dimethylaminoethanol, or 'Deaner': neither tranquillizer (since it 'energizes'), nor sympathomimetic nor 'stimulant' (it causes no nervousness, excess motor activity, impairment of self-criticism or euphoria), it acts as a 'biochemical corrective' to restore impaired nervous function with resultant improvement in almost any psychosomatic condition.

The only contra-indication is grand-mal epilepsy.

Indications.

The main indications are mentioned above, but migraine also responds well (80% of cases) and spastic constipation or mucous colitis will generally improve.

Psychomotor epilepsy and petit mal can be treated with hope of marked personality improvement.

Behavioural disorders in children are a major indication, problem children showing a reduction in recalcitrance and an increase in cooperation with siblings, parents, teachers and schoolmates. The learning process and attention span are also improved.

While 'Deaner' takes 2-3 weeks to show effect it is also free from let-down when treatment is discontinued.

Dosage:

1 tablet (25 mg.) daily initially. This may be increased to 2 and 3 tablets daily after the first 7-10 days. The tablets are

taken as a single dose in the morning. Children often require more than adults, but the average maintenance level is ½-3 tablets daily, a maximum of 90 mg. daily is sometimes required. There are no known toxic effects in either short- or long-term treatment.

'Deaner' is an original product of Riker research, and is distributed by Riker Laboratories Africa (Pty.) Ltd. of P.O. Box 1355, Port Elizabeth, from whom literature and trial material are freely available on application.

CORRESPONDENCE : BRIEWERUBRIEK

AFRIKAANS AS MEDIESE VAKTAAL

Aan die Redakteur: As iemand wat die vordering van Afrikaans om sy plek op die algemeen wetenskaplike (maar meer spesifiek die mediese terrein) wil sien inneem, wil ek van u uitnodiging graag ook gebruik maak om 'n mening oor ‚Afrikaans as Mediese Vaktaal' te stel.

Die *Tydskrif* het reeds al in die regte rigting beweeg deur vertalings van redaksionele stukke te staak. Hierdie stap word seker allerweë verwelkom. 'n Vertaling kan beswaarlik die inhoud van die oorspronklike netjies weergee, en die ondervinding leer dit ook. Ons is daarby almal tweetalig genoeg om albei landstale te kan lees en verstaan. U stap sal wellig ook tweetaligheid help bevorder, sodat om albei redes dit deesdae 'n verkwisting van tyd én ruimte in die *Tydskrif* is om voort te gaan op die ou weg. Tweetalige redaksionele stukke, elkeen oor sy eie onderwerp, is dus baie meer gepas. Mag u net daarop gewys word dat veral uself voortaan 'n leidende aandeel kan neem in die verwesenliking van die doel voor oë?

Eén rede waarom Afrikaans in die *Tydskrif* nog op onvaste voet is, is seker die feit dat baie voornemende skrywers, sowel as baie dosente wat oorsee studeer het, onder die invloed veral van Nederlands verkeer. Hulle styl en woordkeuse is ietwat tè uitlands om aangenaam-klinkende Afrikaans te wees. Tot tyd en wyl ons dus in hierdie land baie meer dokters deur medium van Afrikaans opgelei het, sal ons die steurende invloede maar moet bly verdra.

Hiermee kom ons nou by u gedagte van die daarstelling van 'n ‚raadplegende' (? raadgewende) liggaam. Die idee is seker goed; maar die groot vraag is, of ons hierdie keer wel beter sal vaar as wat dit met die ‚leiding' insake die *Afrikaanse Ontleedkundige Terme* gegaan het? 'n Mens voel nog geneig om 'n bietjie te twyfel. 'n Vaktaal laat hom nie somaar empiries in 'n vorm giet nie; dit moet, soos dit met die groei van Afrikaans self die geval was, *ontwikkel!* Vreemde invloede, soos onkruid, sal beveg moet word, en die eie sal ooreenkomstiglik aangemoedig moet word. ‚Kontinentalismes', enersyds, en uiterste ‚purismes' andersyds, sal sover moontlik geweer moet word, of uitsterf vóór ons ons doel sal bereik.

Maar daar is iets anders. Ons moet die feit voor oë hou dat ons *Tydskrif* nie net vir ons hier te lande nie, maar ook vir oorsese lesers, bv., Nederlandse en Belgiese lesers, bedoel behoort te wees. En wat van lesers in die Britse Eilande en in Duitsland? Nou, omdat dit só die geval is, moet ons *uniformiteit in ons terminologie* ernstiglik nastreef.

Nou bestaan daar reeds 'n *Internasionale Terminologie*. Wat is daar wat ons verhinder om dít as leidraad vir ons vaktaal in die *Tydskrif*, én aan ons universiteite, sover as moontlik te volg? Hiermee word geen slaafse navolging bedoel nie; dit sou nie moontlik wees nie, maar, met so 'n riglyn hoef ons nie na 'n ander te soek nie; vreemde lesers kan dit beste volg; dit sal Afrikaans as vaktaal help ophef, sodat ons geen vrees hoef te hê dat dit platvloers (en dus aanstootlik) sal klink nie vanweë die moontlike insypeling van onestetiese terme. Hierdie punt is nie so vergesog nie; laat iemand wat hieraan twyfel 'n daggie afneem en self gaan uitvind. Geen bestaande terminologie sal vir onbepaalde tyd onveranderd voort bly bestaan nie, en veranderinge sal af en toe gemaak word, maar die internasionale gebruiksvorms het seker die minste skortings.

In navolging van genoemde terminologie sal ons seker goed vaar deur Latynse en Griekse benamings vir *organe* te gebruik soos, bv., *cervix* i.p.v. serviks; *uterus* i.p.v. baarmoeder, ens. Maar as ons sulke woorde in byvoeglike sin wil gebruik, en daarby verafrikaans, dan sou *servikaal* i.p.v. cervicalis, *uterien(e)*, ens. aanneemlik klink. Dit sou ook meer esteties klink om te praat van (en veral te skryf) ‚ulcus cervicalis' i.p.v., ‚servikale ulcus'. In die tweede geval lyk dit of ons 'n perd saam met 'n donkie inspan. En dit kom nogal baie voor. Waarom nie albei woorde verafrikaans en ‚servikale seer' gebruik nie?

Terwyl mens op die gebied van die terminologie is, kan ook bygevoeg word dat sulke woorde soos ‚edeem', ‚epieem', ens. maar bra onesteties klink. As hulle verafrikaans moet word, wat sou verkeerd daarmee wees om ‚epiëma' of ‚edema' te gebruik? Dan dwaal mens ten minste nie so ver weg van gebruike in ander tale nie. Of wil ons só afwyk net om anders te wees?

U het die penne en hopelik die gemoedere in beroering gebring; gee hulle asseblief volop kans sodat hierdie baie belangrike saak goed uitgepluis mag word.

De Gustibus

INDUCTION OF ANAESTHESIA WITH THIOPENTONE

To the Editor: I am unable to refrain from commenting upon Dr. Drummond's letter[1] commenting on Dr. Jackson's article.[2] I support Dr. Jackson wholeheartedly.

Firstly, may I ask how Dr. Drummond calculates his 'adjudged dose' of thiopentone sodium? Attempts at immediate pre-anaesthetic assessing (or ought I to say 'guessing'?) of the exact amount of this drug which will be required are not infrequently quite misleading, and I am sure that even the most experienced anaesthetists will have little difficulty in recalling occasional instances of overdosage resulting from this dangerous form of showmanship, of which some of us are guilty from time to time. The *rate* at which actual quantities of thiopentone are introduced into the circulation is what matters; it may be so slow that anaesthesia is never achieved, or so rapid that small amounts may constitute an overdose.[3]

As a result of excessively rapid injection of thiopentone a very large proportion of the total dose may be administered before the anaesthetist has any idea at all of the patient's reaction. Ideally the drug should be given only according to the needs of the patient,[4] and the safest manner in which this can be achieved is by adherence to the 'test dose' technique, giving 50-100 mg., following which very little clinical acumen is needed to determine whether or not the patient's circulation time and general metabolism approach normality, and in what manner he or she may be expected to react to subsequent doses.

The *rapid* intravenous injection of a relatively safe dose of barbiturate will often result in a sharp fall in blood pressure.[5] Large doses (cf. overdose produced by too rapid injection) depress the central vasomotor centre, with consequent peripheral vasodilation and hypotension. The latter, if undetected and of any serious duration, may cause irreparable cerebral damage or, more immediately, it may be responsible for cardiac irregularities ranging from insignificant extrasystoles to fatal ventricular fibrillation, resulting directly from relative myocardial anoxia following upon poor coronary filling caused by this thiopentone-induced hypotension.

Originally referring to the asthmatic, but equally appropriate for every anaesthesia subject are Lee's words when, in discussing indications and contra-indications of thiopentone induction, he states: 'The drug (thiopentone) should be administered slowly, the anaesthetist feeling his way cautiously.'

His is the voice of vast experience, and we should do well to heed it more often. Let not familiarity with this most useful of drugs breed insidious contempt. Thiopentone remains probably the most dangerous drug in daily use by anaesthetists. Let us, therefore, show it the respect which such a potency demands.

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